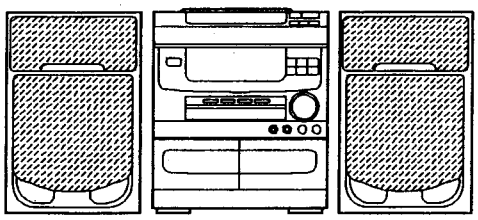
aiwa

aiwa SERVICE

NSX-V50
NSX-V53

SERVICE MANUAL



COMPACT DISC STEREO
CASSETTE SYSTEM

• BASIC TAPE MECHANISM: 2ZM-3 PR6N
• BASIC CD MECHANISM: 4ZG-1TGFR

• TYPE: (50) EE K EZ EEZ V
(53) EE EEZ

REVISION PUBLISHING

SYSTEM	CENTER UNIT	SPEAKER
NSX-V50 (EE,K,EZ,EEZ,V)	CX-NV50	SX-FNV50
NSX-V53 (EE,EEZ)	CX-NV53	SX-FN550

● This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-957-108-50T).

● If requiring information about the CD mechanism, see Service Manual of 4ZG-1T. (S/M Code No. 09-94C-086-20T).

S/M Code No. 09-958-114-20T

SPECIFICATIONS

Main unit CX-NV50

FM tuner section

Tuning range	EE, EEZ, EZ, K: 87.5 MHz to 108 MHz V: FM1 (OIRT) 65 MHz to 74 MHz (10 kHz step) FM2 (CCIR) 87.5 MHz to 108 MHz (60 kHz step)
Usable sensitivity (IHF)	17.2 dBf
Antenna terminals	75 ohms (unbalanced)

MW tuner section

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

LW tuner section

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

Amplifier section

Power output	Rated 30 W+30 W (6 ohms, T.H.D. 1%, 1 kHz/DIN 45500) Reference: 40 W+40 W (6 ohms, T.H.D. 10%, 1 kHz/DIN 45324) DIN MUSIC POWER 65 W+65 W
Total harmonic distortion	0.07% (15 W, 1 kHz, 6 ohms, DIN-AUDIO)
Inputs	VIDEO/AUX: 150 mV adjustable MIC 1, MIC 2: 1 mV (10 kohms)
Outputs	SUPER WOOFER EE, EEZ, EZ, K: 2.45 V V: 1.9 V SPEAKERS: accepts speakers of 6 ohms or more SURROUND SPEAKERS: accepts speakers of 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

Cassette deck section

Track format	4 tracks, 2 channels stereo
Frequency response	CrO_2 tape: 50 Hz-16000 Hz Normal tape: 50 Hz-15000 Hz
Signal-to-noise ratio	60 dB (Dolby B NR ON, CrO_2 tape peak level above 5 kHz)
Recording system	AC bias
Heads	DECK 1: Playback head × 1 DECK 2: Recording/playback/erase head × 1

Compact disc player section

Laser	Semiconductor laser (λ=780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.03% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

SPEAKER SYSTEM SX-FNV50

Cabinet type	3 way, bass reflex with surround speaker (Magnetism sealed type)
Speaker	Woofer: 140 mm (5 5/8 in.) cone type Tweeter: 80 mm (3 1/4 in.) cone type Super tweeter: 50 mm (2 in.) ceramic type Surround speaker: 80 mm (3 1/4 in.) cone type
Impedance	Front speaker: 6 ohms Surround speaker: 16 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	206 × 302 × 260 mm (8 1/8 × 12 × 10 1/4 in.)
Weight	3.6 kg (7 lbs. 15 oz.)

SPEAKER SYSTEM SX-FN550

Cabinet type	3 way, bass reflex with surround speaker (Magnetism sealed type)
Speaker	Woofer: 130 mm (5 1/8 in.) cone type Tweeter: 80 mm (3 1/4 in.) cone type Super tweeter: 50 mm (2 in.) ceramic type Surround speaker: 80 mm (3 1/4 in.) cone type
Impedance	Front speaker: 6 ohms Surround speaker: 16 ohms
Output sound pressure level	88 dB/W/m
Dimensions (W × H × D)	206 × 302 × 260 mm (8 1/8 × 12 × 10 1/4 in.)
Weight	3.8 kg (7 lbs. 15 oz.)

General

Power requirements	230 V AC, 50 Hz
Power consumption	180 W
Dimensions of main unit (W × H × D)	260 × 306.8 × 3405 mm (10 1/4 × 12 1/8 × 13 1/2 in.)
Weight of main unit	7.3 kg (16 lbs. 2 oz.)

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

■ ACCESSORIES ／ PACKAGE LIST

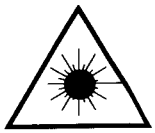
DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	85-NF6-906-018		IB,ESF(NV53)-G<3EE,3EEZ>
2	85-NF6-907-018		IB,EGI(NV53)-G<3EE,3EEZ>
3	85-NF6-905-018		IB,EGI-G<EE,EZ,EEZ>
4	85-NF6-910-019		IB,V(M)<V>
5	85-NF6-904-018		IB,ESF(E)-G<EE,K,EZ,EEZ>
6	87-043-106-019		FM,WIRE ANT (Z)<EXCEPT V>
7	85-NF5-631-019		RC-T501
8	87-006-225-019		AM LOOP ANT NC2
9	87-043-115-01B		ANT,FEEDER FM<V>

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

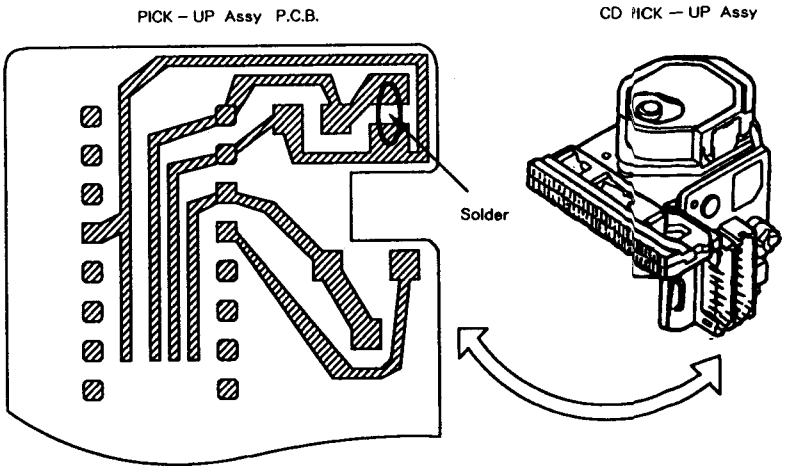
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block (KSS-210A)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure to ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	85-NF6-602-010		IC,LC866432V-5752
	87-070-083-010		IC,GP1U281X
	87-020-966-010		IC,STK4142-MK2
	87-070-121-010		IC,HA12185NT
	87-070-232-010		IC,BA3834S
	87-017-375-080		IC,TC4094BF
	87-001-874-010		IC,HA12134A
	87-017-673-010		IC,BA3837
	87-017-022-080		IC,NJM2068M-D(T1)
	87-017-374-010		IC,TC4094BP
	87-017-804-010		IC,BU4052BCP
	87-070-263-019		IC,TA2041F
	87-017-787-010		IC,M62412P
	87-070-127-010		IC,LC72131
	87-001-607-080		IC,NJM4558M
	87-017-714-010		IC,LA1836
TRANSISTOR			
	87-026-463-080		TR,2SA933S(RS)
	89-213-702-010		TR,2SB1370E
	87-026-609-080		TR,KTA1266GR
	87-026-610-080		TR,KTC3198GR
	89-327-125-080		C-TR,2SC2712GR
	89-332-665-080		TR,2SC3266GR
	89-111-625-080		C-TR,2SA1162GR
	89-113-187-880		TR,2SA1318TU
	87-026-235-080		C-TR,DTC114EK
	89-333-266-080		C-TR,2SC3326B
	87-026-211-080		C-TR,DTA144EK
	87-026-232-080		C-TR,DTA144WK
	87-026-226-080		C-TR,DTA143EK
	89-503-655-680		FET,2SK365GR/BL
	89-333-317-080		TR,2SC3331T
	89-327-126-080		C-TR,2SC2712BL
	89-109-521-080		TR,2SA952K
	89-112-965-080		TR,2SA1296GR
	89-406-555-080		TR,2SD655E
	87-026-210-080		C-TR,DTC144EK
	87-026-214-080		TR,DTA114YS
	89-327-143-080		TR,2SC2714(O)
	89-505-434-580		C-FET,2SK543(4/5)
DIODE			
	87-017-978-080		DIODE,1N4003
	87-020-027-080		C-DIODE,1SS184
	87-020-125-080		C-DIODE,1SS181
	87-020-465-080		DIODE,ISS133
	87-017-174-080		ZENER,HZS11A3L
	87-070-150-080		ZENER,MTZJ33D
	87-002-225-010		DIODE,DBF40C-K10
	87-020-691-080		DIODE,1SS132T-72
	87-002-608-080		DIODE,DSF10TC
	87-001-914-080		ZENER,UTZJ6.2B
	87-070-136-080		ZENER,MTZJ5.1B
	87-020-331-080		C-DIODE,DAN202K
	87-001-290-080		ZENER,HZS6B1L
	87-020-330-080		C-DIODE,DAP202K
	87-001-559-080		DIODE,1SS131
	87-017-148-080		ZENER,HZS6A1L
MAIN C.B			
C102	87-010-390-090		CAP,ELECT 3300-25SME
C104	87-010-235-080		CAP,E 470-16 SME
C105	87-010-381-080		CAP,E 330-16 SME
C106	87-010-764-080		CAP,E 47-63
C107	87-010-406-080		CAP,E 22-50 SME
C108	87-010-406-080		CAP,E 22-50 SME
C109	87-010-263-080		CAP,E 100-10
C112	87-010-406-080		CAP,E 22-50 SME
C113	87-010-403-080		CAP,E 3.3-50 SME
C115	87-016-247-080		C-CAP,0.1-50F
C116	87-010-179-080		C-CAP,S 1200P-50 B
C117	87-010-196-080		C-CAP,S 0.1-25 F
C118	87-010-196-080		C-CAP,S 0.1-25 F
C119	87-010-196-080		C-CAP,S 0.1-25 F
C126	87-016-055-090		CAP,E 3300-42 HI-R
C127	87-016-055-090		CAP,E 3300-42 HI-R
C128	87-012-368-080		C-CAP,S 0.1-50 F
C131	87-012-368-080		C-CAP,S 0.1-50 F
C152	87-010-260-080		CAP,E 47-25 SME
C201	87-010-197-080		C-CAP,S 0.01-25 B
C202	87-018-211-080		CAP,TC-U 0.01
C203	87-010-197-080		C-CAP,S 0.01-25 B
C204	87-018-211-080		CAP,TC-U 0.01
C213	87-010-401-080		CAP,E 1-50 SME
C214	87-010-401-080		CAP,E 1-50 SME
C215	87-010-182-080		C-CAP,S 2200P-50 B
C216	87-010-182-080		C-CAP,S 2200P-50 B
C217	87-010-404-080		CAP,E 4.7-50 SME
C218	87-010-404-080		CAP,E 4.7-50 SME
C221	87-010-401-080		CAP,E 1-50 SME
C222	87-010-401-080		CAP,E 1-50 SME
C223	87-010-260-080		CAP,E 47-25 SME
C224	87-010-260-080		CAP,E 47-25 SME
C225	87-010-260-080		CAP,E 47-25 SME
C226	87-010-260-080		CAP,E 47-25 SME
C227	87-018-209-080		CAP,TC-U 0.1-50 F
C228	87-018-209-080		CAP,TC-U 0.1-50 F
C231	87-010-196-080		C-CAP,S 0.1-25 F
C235	87-010-318-080		C-CAP,S 47P-50 CH
C236	87-010-318-080		C-CAP,S 47P-50 CH
C237	87-010-196-080		C-CAP,S 0.1-25 F
C243	87-010-154-080		C-CAP,S 10P-50 CH
C244	87-015-879-080		C-CAP,10P CH
C245	87-018-208-080		CAP,TC-U 0.047-50 F
C250	87-010-197-080		C-CAP,S 0.01-25 B
C297	87-010-260-080		CAP,E 47-25 SME
C298	87-010-260-080		CAP,E 47-25 SME
C303	87-012-157-080		C-CAP,S 330P-50 CH
C304	87-012-157-080		C-CAP,S 330P-50 CH
C305	87-012-155-080		C-CAP,S 180P-50 CH
C306	87-012-155-080		C-CAP,S 180P-50 CH
C307	87-010-197-080		C-CAP,S 0.01-25 B
C308	87-010-197-080		C-CAP,S 0.01-25 B
C313	87-010-181-080		C-CAP,S 1800P-50 B
C314	87-010-181-080		C-CAP,S 1800P-50 B
C315	87-010-179-080		C-CAP,S 1200P-50 B
C316	87-010-179-080		C-CAP,S 1200P-50 B
C317	87-012-142-080		C-CAP,S 0.33-16 F
C318	87-010-955-080		C-CAP,0.33-16 R
C319	87-012-141-080		C-CAP,S 0.22-16 F
C320	87-012-141-080		C-CAP,S 0.22-16 F
C321	87-010-196-080		C-CAP,S 0.1-25 F
C322	87-010-196-080		C-CAP,S 0.1-25 F
C324	87-010-260-080		CAP,E 47-25 SME
C325	87-010-370-080		CAP,E 330-6.3 SME
C332	87-010-196-080		C-CAP,S 0.1-25 F
C334	87-010-406-080		CAP,E 22-50 SME
C335	87-010-805-080		C-CAP,S 1-16F
C336	87-010-805-080		C-CAP,S 1-16F
C351	87-012-154-080		C-CAP,S 150P-50 CH
C352	87-012-154-080		C-CAP,S 150P-50 CH
C451	87-012-140-080		C-CAP,S 470P-50 CH
C452	87-012-140-080		C-CAP,S 470P-50 CH

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C453	87-010-178-080		C-CAP,S 1000P-50 B
C454	87-010-178-080		C-CAP,S 1000P-50 B
C455	87-010-178-080		C-CAP,S 1000P-50 B
C456	87-010-260-080		CAP,E 47-25 SME
C457	87-010-197-080		C-CAP,S 0.01-25 B
C458	87-010-183-080		C-CAP,S 2700P-50 B
C459	87-010-183-080		C-CAP,S 2700P-50 B
C460	87-010-183-080		C-CAP,S 2700P-50 B
C470	87-010-196-080		C-CAP,S 0.1-25 F
C501	87-010-177-080		C-CAP,S 820P-50 SL
C502	87-010-177-080		C-CAP,S 820P-50 SL
C503	87-012-155-080		C-CAP,S 180P-50 CH
C504	87-012-155-080		C-CAP,S 180P-50 CH
C515	87-010-545-080		CAP,E 0.22-50 SME
C516	87-010-545-080		CAP,E 0.22-50 SME
C519	87-010-196-080		C-CAP,S 0.1-25 F
C521	87-010-197-080		C-CAP,S 0.01-25 B
C522	87-010-318-080		C-CAP,S 47P-50 CH
C523	87-010-197-080		C-CAP,S 0.01-25 B
C524	87-010-402-080		CAP,E 2.2-50 SME
C530	87-010-194-080		C-CAP,S 0.047-25 F
C531	87-010-545-080		CAP,E 0.22-50 SME
C532	87-010-382-080		CAP,E 22-25 SME
C533	87-010-404-080		CAP,E 4.7-50 SME
C534	87-010-404-080		CAP,E 4.7-50 SME
C535	87-010-404-080		CAP,E 4.7-50 SME
C536	87-010-404-080		CAP,E 4.7-50 SME
C537	87-018-209-080		CAP,TC-U 0.1-50 F
C538	87-010-384-080		CAP,E 100-25 SME
C540	87-010-196-080		C-CAP,S 0.1-25 F
C541	87-010-196-080		C-CAP,S 0.1-25 F
C543	87-010-544-080		CAP,E 0.1-50 SME
C544	87-010-544-080		CAP,E 0.1-50 SME
C545	87-010-400-080		CAP,E 0.47-50 SME
C546	87-010-400-080		CAP,E 0.47-50 SME
C547	87-010-428-080		C-CAP,S 0.015-25 B
C548	87-010-428-080		C-CAP,S 0.015-25 B
C549	87-018-209-080		CAP,TC-U 0.1-50 F
C550	87-010-183-080		C-CAP,S 2700P-50 B
C553	87-010-182-080		C-CAP,S 2200P-50 B
C554	87-010-182-080		C-CAP,S 2200P-50 B
C557	87-010-178-080		C-CAP,S 1000P-50 B
C558	87-010-178-080		C-CAP,S 1000P-50 B
C641	87-010-196-080		C-CAP,S 0.1-25 F
C701	87-010-381-080		CAP,E 330-16 SME
C702	87-010-404-080		CAP,E 4.7-50 SME
C703	87-010-197-080		C-CAP,S 0.01-25 B
C704	87-010-197-080		C-CAP,S 0.01-25 B
C711	87-010-263-080		CAP,E 100-10 SME 5X11
C712	87-010-196-080		C-CAP,S 0.1-25 F
C722	87-010-311-080		C-CAP,S 12P-50 CH
C723	87-010-178-080		C-CAP,S 1000P-50 B
C725	87-010-178-080		C-CAP,S 1000P-50 B
C727	87-010-196-080		C-CAP,S 0.1-25 F
C728	87-010-248-080		CAP,E 220-10 SME
C732	87-018-134-080		CAP,TC-U 0.01-16 Y
C770	87-010-405-080		CAP,E 10-50 SME
C771	87-010-405-080		CAP,E 10-50 SME
C772	87-010-194-080		C-CAP,S 0.047-25 F
C773	87-010-196-080		C-CAP,S 0.1-25 F
C774	87-010-263-080		CAP,E 100-10 SME 5X11
C775	87-010-405-080		CAP,E 10-50 SME
C776	87-010-197-080		C-CAP,S 0.01-25 B
C777	87-010-400-080		CAP,E 0.47-50 SME
C778	87-010-401-080		CAP,E 1-50 SME
C779	87-010-401-080		CAP,E 1-50 SME
C780	87-010-197-080		C-CAP,S 0.01-25 B
C781	87-010-405-080		CAP,E 10-50 SME
C782	87-010-405-080		CAP,E 10-50 SME
C787	87-010-184-080		C-CAP,S 3300P-50 B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C788	87-010-184-080		C-CAP,S 3300P-50 B
C789	87-010-179-080		C-CAP,S 1200P-50 B
C790	87-010-179-080		C-CAP,S 1200P-50 B
C791	87-010-401-080		CAP,E 1-50 SME
C792	87-010-182-080		C-CAP,S 2200P-50 B
C793	87-010-189-080		C-CAP,S 8200P-50 B
C794	87-010-408-080		CAP,E 47-50 SME
C795	87-010-194-080		C-CAP,S 0.047-25 F
C796	87-010-403-080		CAP,E 3.3-50 SME
C797	87-010-405-080		CAP,E 10-50 SME
C798	87-010-196-080		C-CAP,S 0.1-25 F
C815	87-018-134-080		CAP,TC-U 0.01-16 Y
C816	87-010-197-080		C-CAP,S 0.01-25 B
C817	87-010-197-080		C-CAP,S 0.01-25 B
C818	87-010-197-080		C-CAP,S 0.01-25 B
C819	87-010-197-080		C-CAP,S 0.01-25 B
C820	87-010-260-080		CAP,E 47-25 SME
C821	87-010-197-080		C-CAP,S 0.01-25 B
C822	87-010-197-080		C-CAP,S 0.01-25 B
C823	87-010-197-080		C-CAP,S 0.01-25 B
C824	87-018-209-080		CAP,TC-U 0.1-50 F
C825	87-015-819-080		CHIP CAP 0.01
C826	87-010-196-080		C-CAP,S 0.1-25 F
C827	87-010-196-080		C-CAP,S 0.1-25 F
C828	87-010-197-080		C-CAP,S 0.01-25 B
C829	87-010-197-080		C-CAP,S 0.01-25 B
C830	87-015-819-080		CHIP CAP 0.01
C831	87-010-197-080		C-CAP,S 0.01-25 B
C835	87-010-197-080		C-CAP,S 0.01-25 B
C840	87-010-197-080		C-CAP,S 0.01-25 B
C926	87-010-196-080		C-CAP,S 0.1-25 F
C941	87-010-197-080		C-CAP,S 0.01-25 B
C942	87-010-311-080		C-CAP,S 12P-50 CH
C944	87-010-154-080		C-CAP,S 10P-50 CH
C946	87-014-050-089		CAP,PP 510P-100 J
C947	87-010-401-080		CAP,E 1-50 SME
C948	87-010-196-080		C-CAP,S 0.1-25 F
C949	87-010-197-080		C-CAP,S 0.01-25 B
C951	87-010-401-080		CAP,E 1-50 SME
C983	87-010-544-080		CAP,E 0.1-50
C987	87-015-819-080		CHIP CAP 0.01
C988	87-016-247-080		C-CAP,0.1-50F
C990	87-010-197-080		C-CAP,S 0.01-25 B
C993	87-010-197-080		C-CAP,S 0.01-25 B
C995	87-010-197-080		C-CAP,S 0.01-25 B
C999	87-018-134-080		CAP,TC-U 0.01-16 Y
CF801	87-008-423-019		FILTER,SFE10.7MS 3GA
CF802	82-785-747-019		FILTER,MS 2GHY,R
FFE801	85-NF5-604-010		FE PACK 2(AL)<EE,EEZ,K>
FFE801	85-NF5-603-010		FE PACK 3 OIRT-V(AL)<V>
J250	87-099-678-010		JACK,6.3W/S BLK
J253	87-099-474-010		JACK,PIN 3P BLK
J254	87-033-227-010		TERMINAL,SP 4P R(Z)*
J652	80-MT3-616-010		JACK,PIN 2P
J801	82-NF5-621-010		ANT TERM JBT0222<V>
J801	87-033-230-010		ANT-TERM,ANT AJ-2016<EE, EEZ,K>
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L403	87-007-341-010		COIL,TRAP 85K
L404	87-007-341-010		COIL,TRAP 85K
L451	87-007-336-010		COIL,OSC 85K BIAS
L701	81-631-643-010		COIL 1 POLE MPX
L702	81-631-643-010		COIL 1 POLE MPX
L741	87-006-253-010		COIL,FM DET N
L742	82-NT1-659-010		FILTER,CFAZ-450 2NT
L770	87-003-102-080		COIL,10UH
L832	87-003-098-080		COIL,2.2UH
L941	87-006-208-010		COIL,ANT LW
L942	87-007-305-010		COIL,OSC LW
L981	81-MX4-619-010		AM PACK 4

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
R105	87-022-050-080		RES,M/F 0.22-1W
R106	87-022-050-080		RES,M/F 0.22-1W
R203	87-022-571-080		RES,M/F 0.33-2WJ
R204	87-022-571-080		RES,M/F 0.33-2WJ
RY101	87-045-361-010		RELAY,DH12D2-OS(M)-2
RY102	87-045-382-010		RELAY,0UAZ-SH-112L
SFR301	87-024-174-080		SFR,33K DIA6 V
SFR302	87-024-174-080		SFR,33K DIA6 V
SFR303	87-024-174-080		SFR,33K DIA6 V
SFR304	87-024-174-080		SFR,33K DIA6 V
SFR305	87-024-175-080		SFR,47K DIA6 V
SFR306	87-024-175-080		SFR,47K DIA6 V
SFR451	87-024-175-080		SFR,47K DIA6 V
SFR452	87-024-175-080		SFR,47K DIA6 V
SFR722	87-024-170-080		SFR,3.3K DIA6 V
TC701	87-011-253-080		TRIMMER,30P LAR
TC942	87-011-253-080		TRIMMER,30P LAR
VR651	82-NF5-660-010		VR,50KBX2 RK14K12A
W101	85-NF5-628-010		F-CABLE,7P-2.5
W102	85-NF5-617-010		CABLE,FFC 6P-1.25
X721	87-030-163-010		VIB,XTAL 7.2MHZ(NDK)

FRONT C.B

C201	87-015-698-040		CAP,E 4.7-50 7L
C202	87-015-698-040		CAP,E 4.7-50 7L
C203	87-010-408-040		CAP,E 47-50 SME
C204	87-010-401-040		CAP,E 1-50 SME
C205	87-010-263-040		CAP,E 100-10
C206	87-010-248-040		CAP,E 220-10 SME
C207	87-015-695-040		CAP,E 1-50 7L
C208	87-015-785-080		C-CAP,0.1-25 F
C209	87-010-317-080		C-CAP,S 39P-50 CH
C210	87-010-313-080		C-CAP,S 18P-50 CH
C211	87-010-318-080		C-CAP,S 47P-50 CH
C212	87-015-681-040		CAP,E 10-16 7L
C213	87-010-196-080		C-CAP,S 0.1-25 F
C214	87-010-196-080		C-CAP,S 0.1-25 F
C215	87-015-785-080		C-CAP,0.1-25 F
C250	87-010-178-080		C-CAP,S 1000P-50 B
C381	87-010-196-080		C-CAP,S 0.1-25 F
C382	87-010-196-080		C-CAP,S 0.1-25 F
C383	87-010-196-080		C-CAP,S 0.1-25 F
C384	87-010-196-080		C-CAP,S 0.1-25 F
C389	87-010-196-080		C-CAP,S 0.1-25 F
C401	87-010-196-080		C-CAP,S 0.1-25 F
C601	87-010-196-080		C-CAP,S 0.1-25 F
C602	87-010-322-080		C-CAP,S 100P-50 CH
C605	87-010-490-040		CAP,E 0.1-50 GAS
C606	87-015-676-040		CAP,E 47-6.3 7L
C607	87-010-319-080		C-CAP,S 56P-50 CH
C608	87-010-112-040		CAP,E 100-16
C609	87-010-196-080		C-CAP,S 0.1-25 F
C610	87-012-155-080		C-CAP,S 180P-50 CH
C613	87-010-196-080		C-CAP,S 0.1-25 F
C630	87-010-498-040		CAP,E 10-16 GAS
C640	87-010-382-040		CAP,E 22-25 SME
C646	87-010-196-080		C-CAP,S 0.1-25 F
C647	87-010-197-080		C-CAP,S 0.01-25 B
C652	87-010-184-080		C-CAP,S 3300P-50 B
C653	87-010-184-080		C-CAP,S 3300P-50 B
C654	87-010-180-080		C-CAP,S 1500P-50 B
C655	87-010-184-080		C-CAP,S 3300P-50 B
C656	87-010-184-080		C-CAP,S 3300P-50 B
C657	87-010-196-080		C-CAP,S 0.1-25 F
C658	87-010-060-049		CAP,E 100-16
C659	87-010-370-080		CAP,E 330-6.3
C660	87-010-180-080		C-CAP,S 1500P-50 B
C661	87-010-197-080		C-CAP,S 0.01-25 B
C662	87-010-197-080		C-CAP,S 0.01-25 B
C663	87-016-369-080		C-CAP,S 0.033-25 B K
C664	87-010-428-080		C-CAP,S 0.015-25 B
C669	87-010-404-040		CAP,E 4.7-50 SME
C670	87-010-404-040		CAP,E 4.7-50 SME
C901	87-010-196-080		C-CAP,S 0.1-25 B
C902	87-010-197-080		C-CAP,S 0.01-25 B
C904	87-010-197-080		C-CAP,S 0.01-25 B
FL101	85-NF6-601-010		FL,BJ362GK
J601	82-NF7-630-010		JACK,3.5 MO
J621	82-NF7-630-010		JACK,3.5 MO
LED401	87-017-784-080		LED,SEL1550CM TP8
LED402	87-017-784-080		LED,SEL1550CM TP8
LED403	87-017-784-080		LED,SEL1550CM TP8
LED404	87-017-784-080		LED,SEL1550CM TP8
LED405	87-017-784-080		LED,SEL1550CM TP8
LED406	87-017-784-080		LED,SEL1550CM TP8
LED407	87-017-731-080		LED,SEL1510CM2
LED408	87-017-731-080		LED,SEL1510CM2
LED409	87-017-731-080		LED,SEL1510CM2
LED410	87-017-731-080		LED,SEL1510CM2
LED411	87-017-731-080		LED,SEL1510CM2
LED412	87-017-731-080		LED,SEL1510CM2
LED413	87-017-731-080		LED,SEL1510CM2
LED414	87-017-731-080		LED,SEL1510CM2
LED420	87-070-201-080		LED,SLP9118C-51-S-T1
LED421	87-070-201-080		LED,SLP9118C-51-S-T1
LED422	87-070-201-080		LED,SLP9118C-51-S-T1
LED423	87-070-201-080		LED,SLP9118C-51-S-T1
LED424	87-070-278-010		LED,SLZ-738A-24-S
LED425	87-070-290-010		LED,SLZ936C-30-S
LED426	87-070-278-010		LED,SLZ-738A-24-S
LED427	87-070-278-010		LED,SLZ-738A-24-S
LED428	87-070-290-010		LED,SLZ936C-30-S
LED429	87-070-278-010		LED,SLZ-738A-24-S
S301	87-036-215-080		SW,TACT EVQ-21404M
S302	87-036-215-080		SW,TACT EVQ-21404M
S303	87-036-215-080		SW,TACT EVQ-21404M
S304	87-036-215-080		SW,TACT EVQ-21404M
S305	87-036-215-080		SW,TACT EVQ-21404M
S321	87-036-215-080		SW,TACT EVQ-21404M
S322	87-036-215-080		SW,TACT EVQ-21404M
S323	87-036-215-080		SW,TACT EVQ-21404M
S324	87-036-215-080		SW,TACT EVQ-21404M
S325	87-036-215-080		SW,TACT EVQ-21404M
S326	87-036-215-080		SW,TACT EVQ-21404M
S327	87-036-215-080		SW,TACT EVQ-21404M
S328	87-036-215-080		SW,TACT EVQ-21404M
S329	87-036-215-080		SW,TACT EVQ-21404M
S330	87-036-215-080		SW,TACT EVQ-21404M
S331	87-036-215-080		SW,TACT EVQ-21404M
S332	87-036-215-080		SW,TACT EVQ-21404M
S341	87-036-215-080		SW,TACT EVQ-21404M
S342	87-036-215-080		SW,TACT EVQ-21404M
S343	87-036-215-080		SW,TACT EVQ-21404M
S344	87-036-215-080		SW,TACT EVQ-21404M
S345	87-036-215-080		SW,TACT EVQ-21404M
S346	87-036-215-080		SW,TACT EVQ-21404M
S347	87-036-215-080		SW,TACT EVQ-21404M
VR602	82-NK7-615-010		VR,10KA RK11K1130
W130	82-NF7-647-010		CABLE FFC,13P-1.25
W501	85-NF5-615-010		CABLE,FFC 15P-1.25
X201	87-030-376-080		VIB,CER CSA5.76MG200

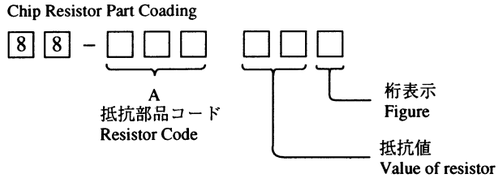
MVR C.B

C701	87-010-181-080		C-CAP,S 1800P-50 B
C702	87-010-181-080		C-CAP,S 1800P-50 B
C703	87-010-404-040		CAP,E 4.7-50 SME
C704	87-010-404-040		CAP,E 4.7-50 SME

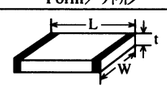
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C705	87-010-194-080		C-CAP,S 0.047-25 F
C706	87-010-194-080		C-CAP,S 0.047-25 F
C707	87-010-186-080		C-CAP,S 4700P-50 B
C708	87-010-186-080		C-CAP,S 4700P-50 B
C709	87-010-195-080		C-CAP,S 0.068-25 F
C710	87-010-195-080		C-CAP,S 0.068-25 F
C711	87-010-405-040		CAP,E 10-50 SME
C712	87-010-405-040		CAP,E 10-50 SME
C713	87-010-380-040		CAP,E 47-16 SME
C714	87-010-370-040		CAP,E 330-6.3 SME
C715	87-010-545-040		CAP,E 0.22-50 SME
C716	87-010-545-040		CAP,E 0.22-50 SME
C719	87-010-380-040		CAP,E 47-16 SME
C720	87-010-178-080		C-CAP,S 1000P-50 B
C721	87-010-198-080		C-CAP,S 0.022-25 B
C722	87-010-178-080		C-CAP,S 1000P-50 B
C723	87-010-318-080		C-CAP,S 47P-50 CH
C724	87-010-318-080		C-CAP,S 47P-50 CH
MVR741	85-NF6-608-010		VR,50KBX2 W/S (M)
KEY C.B			
S349	87-036-215-080		SW,TACT EVQ-21404M
S350	87-036-215-080		SW,TACT EVQ-21404M
S351	87-036-215-080		SW,TACT EVQ-21404M
S352	87-036-215-080		SW,TACT EVQ-21404M
S353	87-036-215-080		SW,TACT EVQ-21404M
W301	83-NF8-613-010		F-CABLE,2P-2.0 KEY
AC2 C.B			
R101	87-022-050-080		RES,M/F 0.22-1W
R102	87-022-050-080		RES,M/F 0.22-1W
⚠PT101	85-NF6-607-010		PT,5NF-6 EK
DECK C.B			
C1	87-018-209-080		CAP,TC-U 0.1-50 F
SFR1	87-024-581-010		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-310		SOL ASSY,27
SOL2	82-ZM1-618-310		SOL ASSY,27
SW1	87-036-378-010		SW,PUSH 1-1-1 SH2
SW2	87-036-378-010		SW,PUSH 1-1-1 SH2
SW3	87-036-378-010		SW,PUSH 1-1-1 SH2
SW4	87-036-378-010		SW,PUSH 1-1-1 SH2
SW5	87-036-378-010		SW,PUSH 1-1-1 SH2
SW6	87-036-378-010		SW,PUSH 1-1-1 SH2
SW8	87-036-378-010		SW,PUSH 1-1-1 SH2
SW9	87-036-378-010		SW,PUSH 1-1-1 SH2
RELAY-1 C.B			
W106	85-MA2-615-019		CONN ASSY 3P PH
RELAY-2 C.B			
W105	83-NEG-608-010		CONN ASSY 8P-RPB

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coading



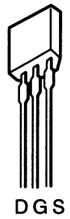
チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法 (mm) Form／外形	L	W	t	Resistor Code: A 抵抗コード : A
1／32W	1608	±5%	CJ		1.6	0.8	0.35	108
1／10W	2125	±5%	CJ		2	1.25	1.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

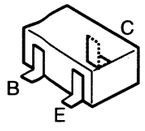
TRANSISTOR ILLUSTRATION

2SA933 2SC3266
2SA952 2SC3331
2SA1296 2SD655
2SA1318 KTA1266
KTC3198

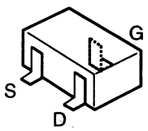
DTA114YS



2SK365



2SA1162 DTA143EK
2SC2712 DTA144EK
2SC2714 DTA144WK
2SC3326 DTC114EK
DTC144EK



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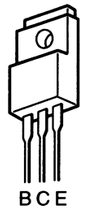
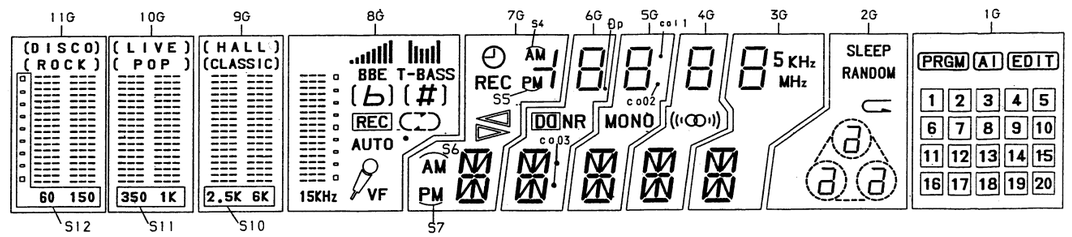
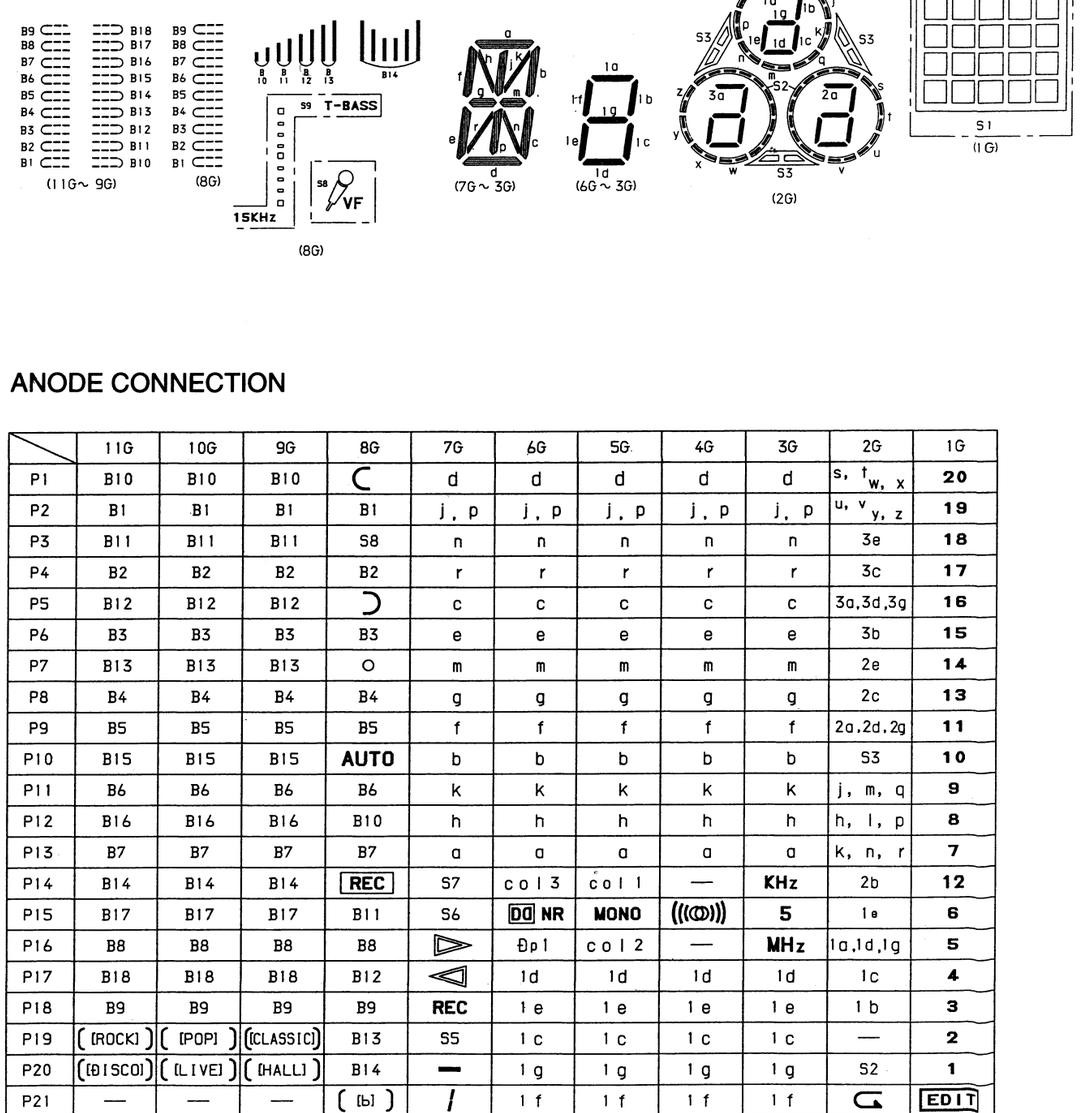


2SB1370

FL DISPLAY (BJ362GK) GRID ASSIGNMENT ／ ANODE CONNECTION

GRID ASSIGNMENT





	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B10	B10	B10	C	d	d	d	d	d	s, $t_{w,x}$	**20**
P2	B1	B1	B1	B1	j, p	j, p	j, p	j, p	j, p	u, $v_{y,z}$	**19**
P3	B11	B11	B11	S8	n	n	n	n	n	3e	**18**
P4	B2	B2	B2	B2	r	r	r	r	r	3c	**17**
P5	B12	B12	B12	D	c	c	c	c	c	3a,3d,3g	**16**
P6	B3	B3	B3	B3	e	e	e	e	e	3b	**15**
P7	B13	B13	B13	O	m	m	m	m	m	2e	**14**
P8	B4	B4	B4	B4	g	g	g	g	g	2c	**13**
P9	B5	B5	B5	B5	f	f	f	f	f	2a,2d,2g	**11**
P10	B15	B15	B15	**AUTO**	b	b	b	b	b	S3	**10**
P11	B6	B6	B6	B6	k	k	k	k	k	j, m, q	**9**
P12	B16	B16	B16	B10	h	h	h	h	h	h, l, p	**8**
P13	B7	B7	B7	B7	a	a	a	a	a	k, n, r	**7**
P14	B14	B14	B14	**REC**	S7	col 3	col 1	—	**KHz**	2b	**12**
P15	B17	B17	B17	B11	S6	**DD NR**	**MONO**	(((O)))	**5**	1e	**6**
P16	B8	B8	B8	B8	▷	Dp1	col 2	—	**MHz**	1a,1d,1g	**5**
P17	B18	B18	B18	B12	◁	1d	1d	1d	1d	1c	**4**
P18	B9	B9	B9	B9	**REC**	1e	1e	1e	1e	1b	**3**
P19	(ROCK)	(POP)	(CLASSIC)	B13	S5	1c	1c	1c	1c	—	**2**
P20	(DISCO)	(LIVE)	(HALL)	B14	—	1g	1g	1g	1g	S2	**1**
P21	—	—	—	(♭)	/	1f	1f	1f	1f	⊂	EDIT
P22	**DISCO**	**LIVE**	**HALL**	♭ ♯	◷	1b	1b	1b	1b	**SLEEP**	A.I
P23	**ROCK**	**POP**	**CLASSIC**	(♯)	S4	1a	1a	1a	1a	**RANDOM**	PRGM
P24	S12	S11	S10	S9 Z	—	—	—	—	—	—	S1
P25	—	—	—	**BBE**	—	—	—	—	—	—	—

A MAIN C.B

FROM I RELAY-2 C.B
CON351 1 3 5 7 8
TO PIN351

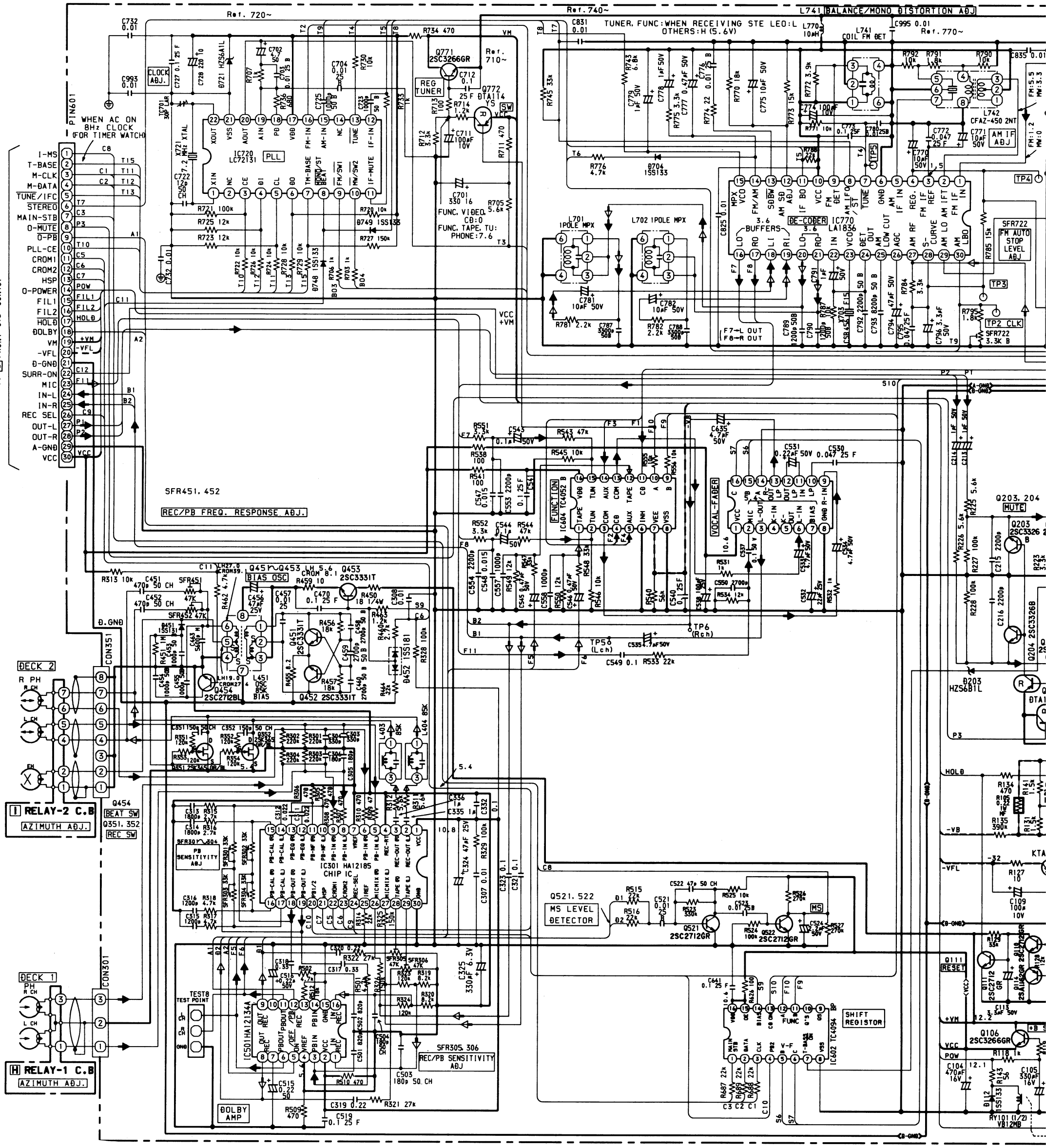
FROM H RELAY-1 C.B
CON301 1 3
TO PIN301

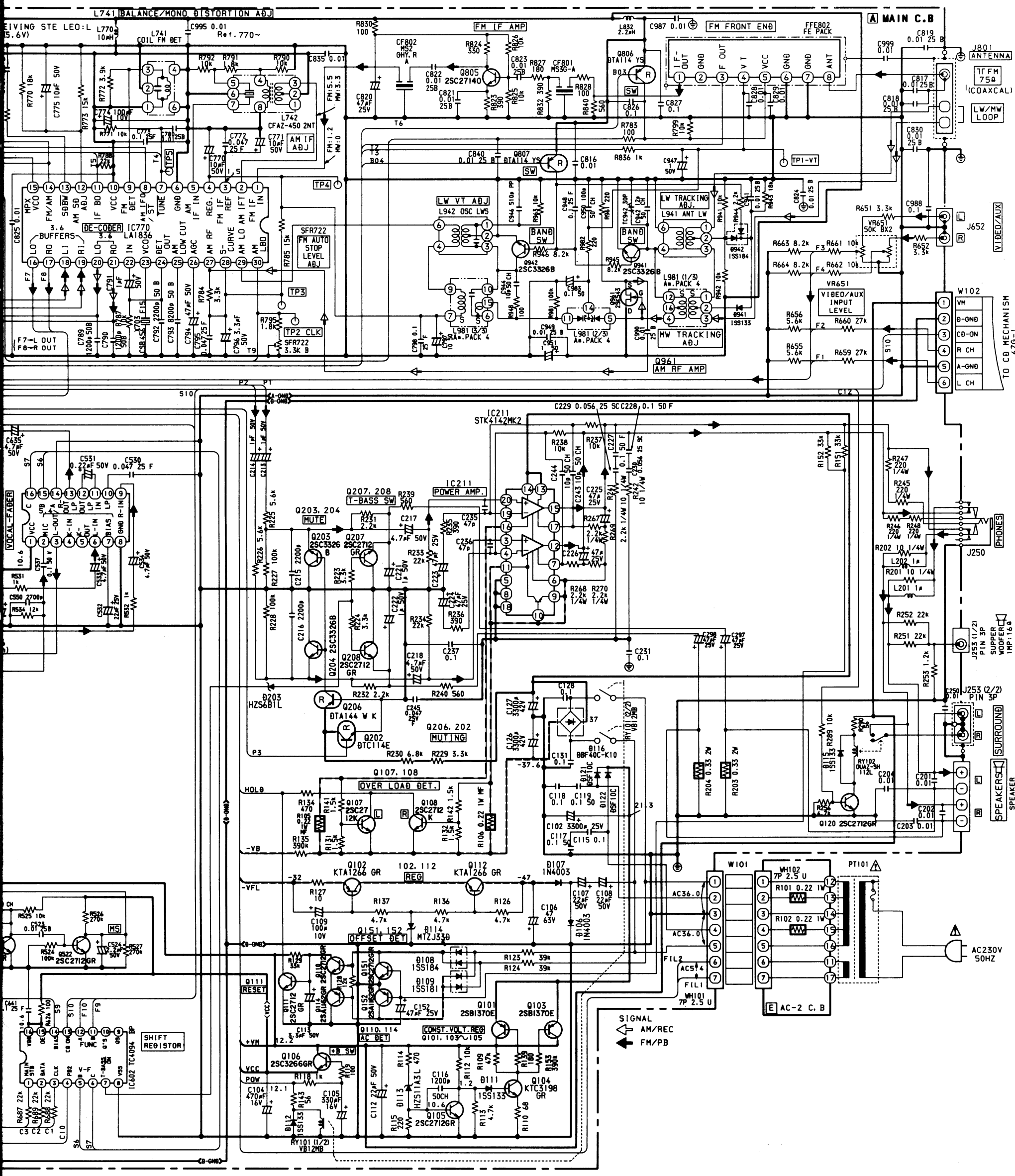
J801 ANTENNA
LW/MW LOOP
FM 75Ω (COAXIAL)
VR651 VIDEO/AUX INPUT LEVEL
J652 VIDEO/AUX R L
FROM CD MECHANISM 4ZG-I-3CB C.B
W102 1 3 5
TO CON604
J253 SURROUND L R
J253 SUPER WOOFER
J251 SPEAKER IMP:6Ω SPEAKERS
J250 PHONES

FROM B FRONT C.B
CON101
1 3 5 7 9 11 13 15 17 19 21 23 25 27 28 30

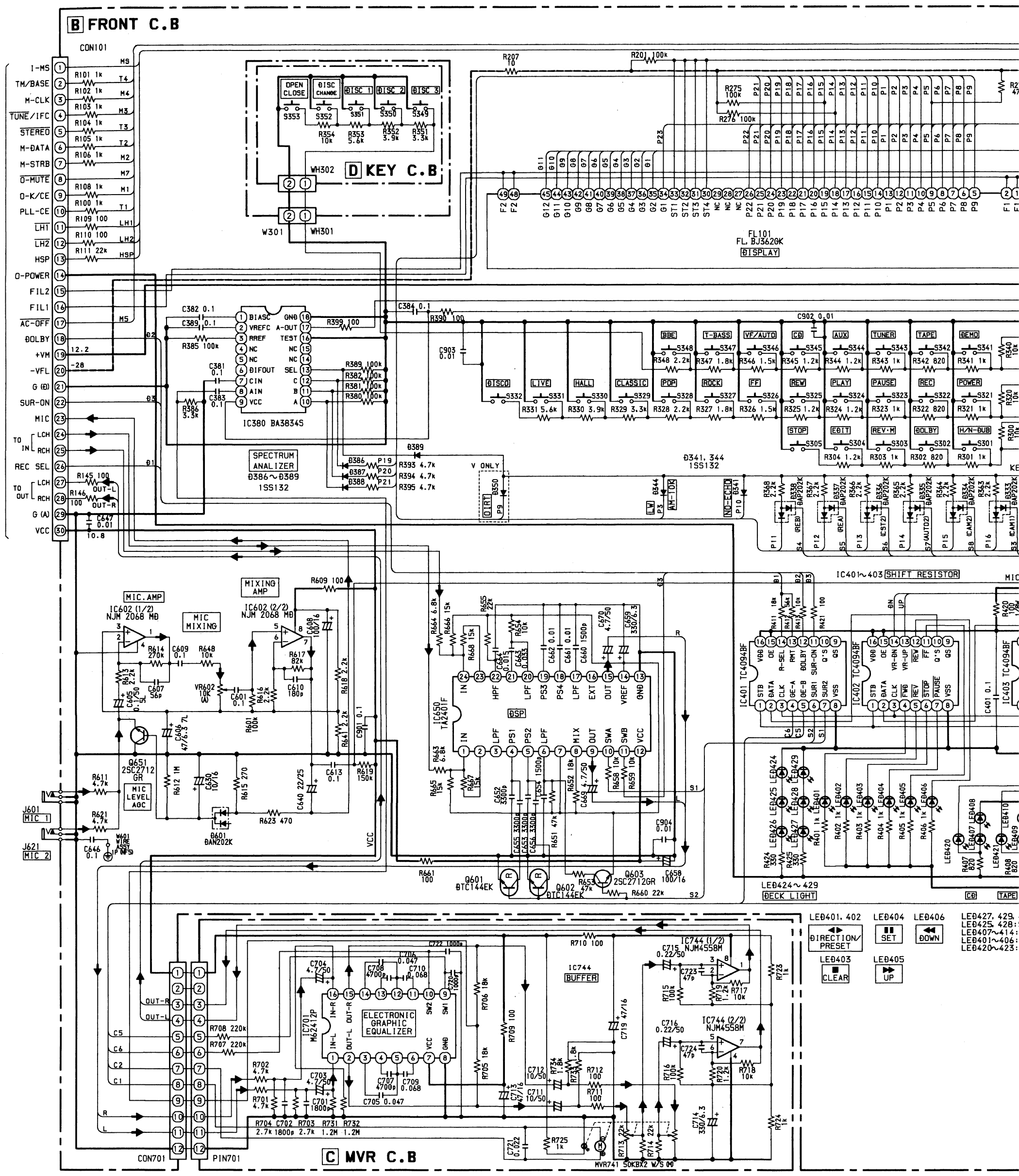
TO E AC2 C.B
WH102
BLK7
5
3
BLK
YEL1

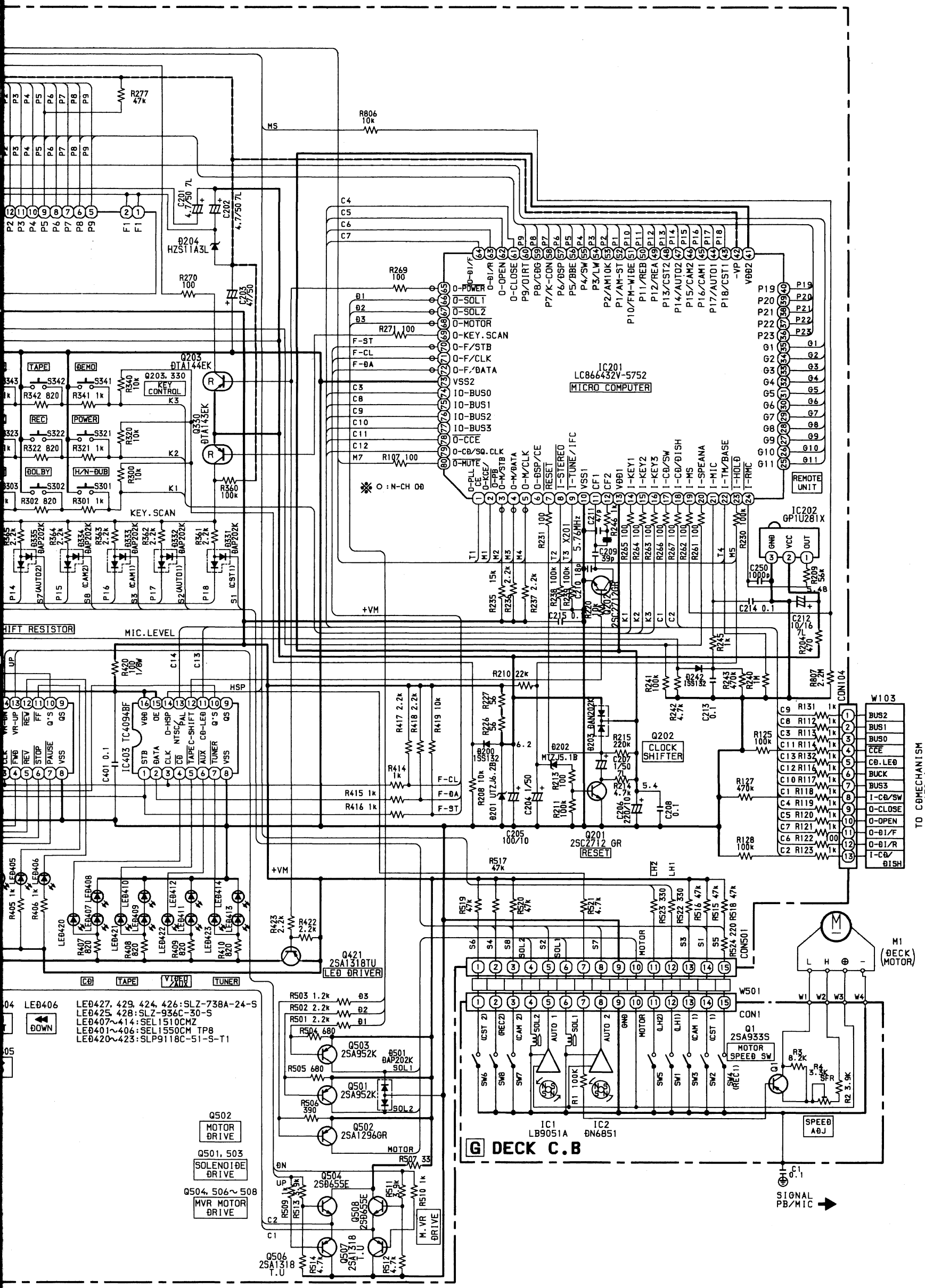
SCHEMATIC DIAGRAM-1 (MAIN)

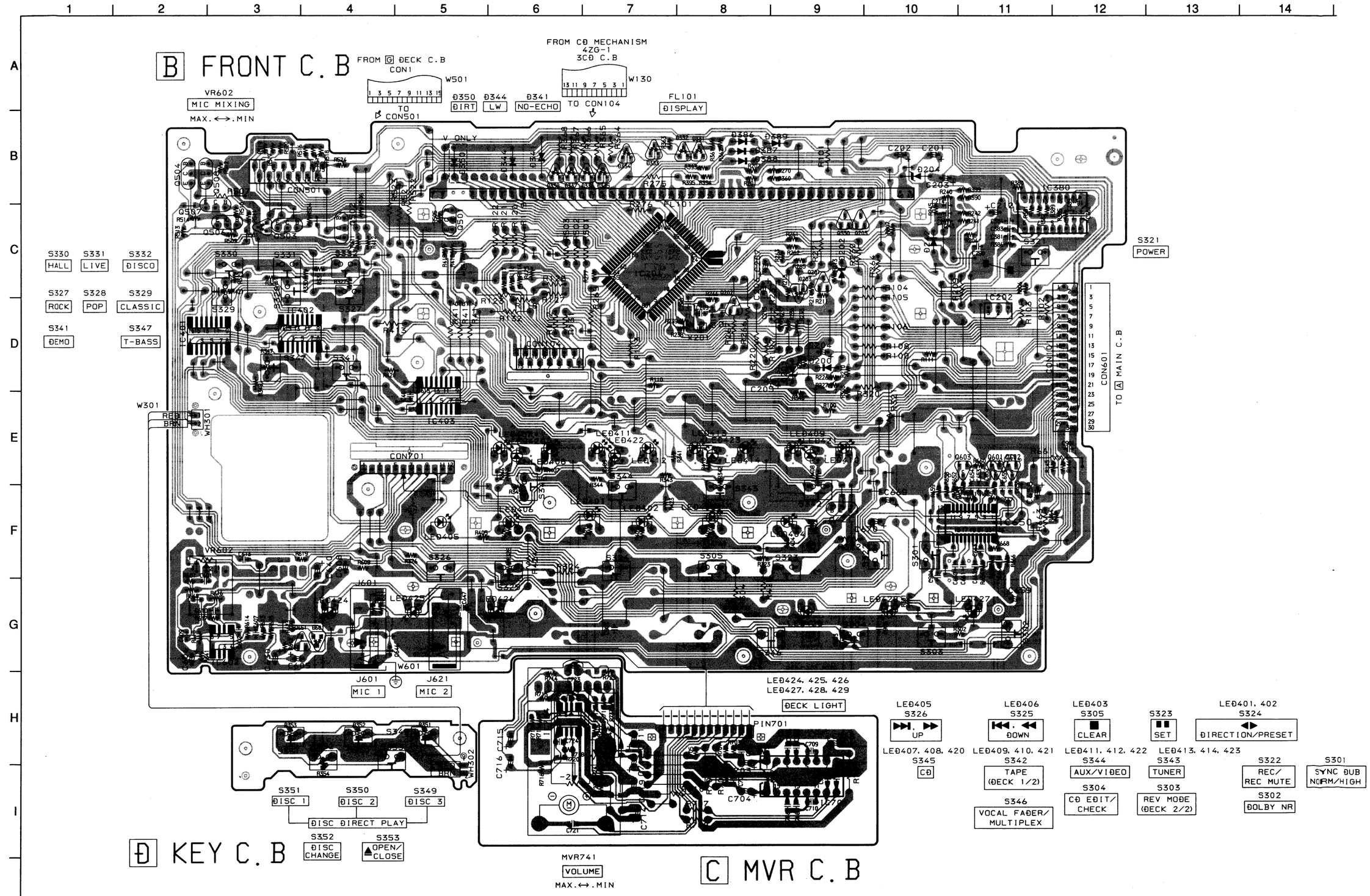



A MAIN C.B
L741 BALANCE/MONO DISTORTION ADJ
FM IF AMP
FM FRONT END
FFE802 FE PACK
J801 ANTENNA
FM 75Ω (COAXCAL)
LW/MW LOOP
AM IF ADJ
DE-CODER IC770 LA1836
BUFFERS
SFR722 FM AUTO STOP LEVEL ADJ
LW VT ADJ
L942 OSC LW5
LW TRACKING ADJ.
L941 ANT LW
MW TRACKING ADJ
L981 (1/3) Aø.PACK 4
L981 (2/3) Aø.PACK 4
L981 (3/3) Aø.PACK 4
Q961 AM RF AMP
TP1-VT
TP2 CLK
TP3
TP4
TP5
VIDEO/AUX
VIDEO/AUX INPUT LEVEL
VR651 50K BX2
W102
TO CØ MECHANISM 4ZG-1 3CØ C. B
IC211 STK4142MK2
IC211 POWER AMP.
Q203. 204 MUTE
Q207. 208 T-BASS SW
Q206. 202 MUTING
Q107. 108 OVER LOAD DET.
Q102. 112 REG
Q151. 152 OFFSET DET
Q111 RESET
Q110. 114 AC DET
CONST. VOLT. REG Q101. 103~105
PHONES
J250
J253 (1/2) PIN 3P
J253 (2/2) PIN 3P
SUPPER WOOFER IMP:16Ω
SURROUND
SPEAKERS
SPEAKER IMP : 6Ω
Q120 2SC2712GR
W101
WH102 7P 2.5 U
PT101
AC230V 50HZ
E AC-2 C. B
VOCAL-FADER
SHIFT REGISTOR
IC602 TC4094
SIGNAL
AM/REC
FM/PB

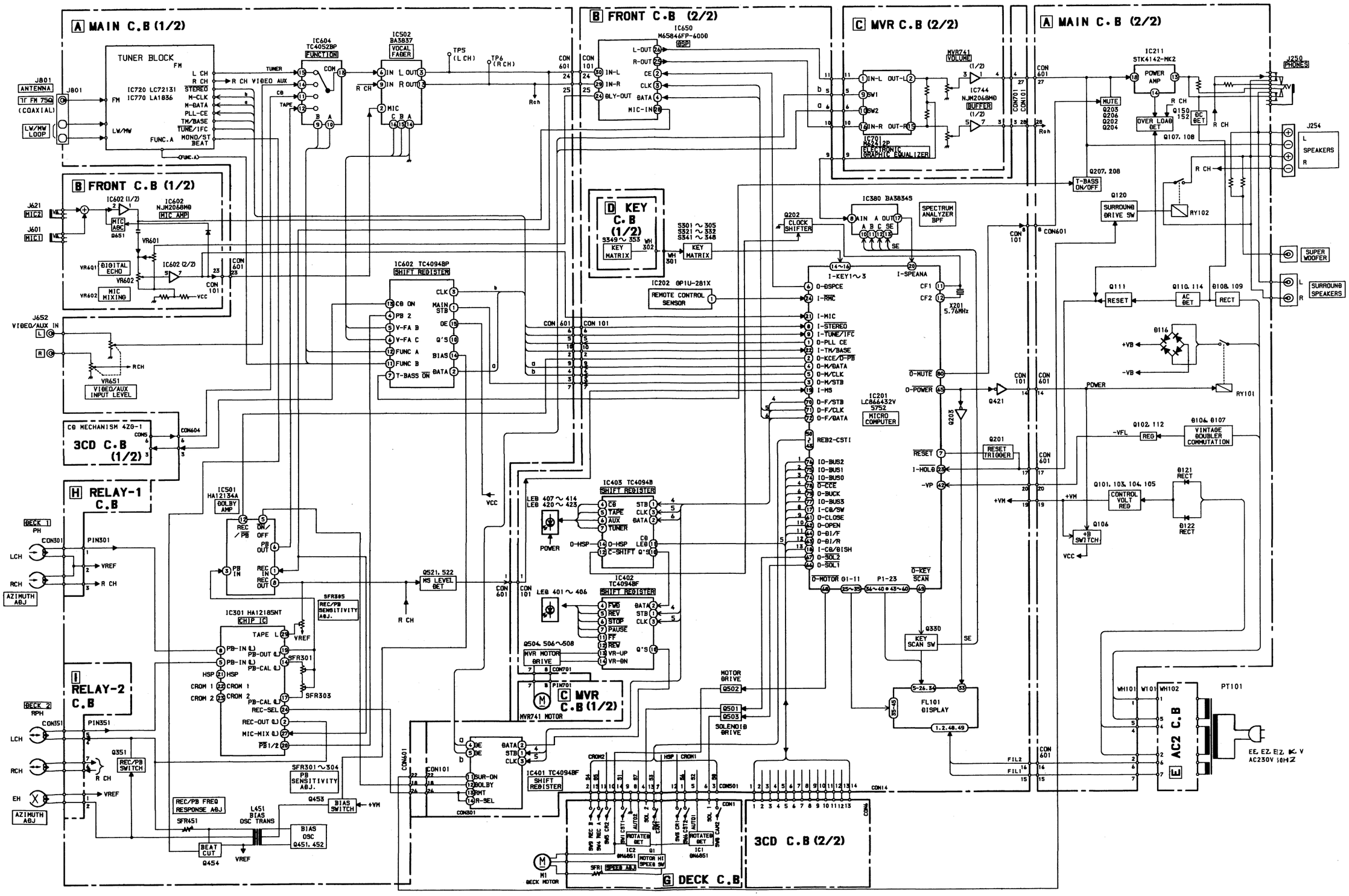
SCHEMATIC DIAGRAM-2 (FRONT)




IC201
LC866432V-5752
MICRO COMPUTER
IC202
GP1U281X
REMOTE UNIT
KEY.SCAN
MIC.LEVEL
SHIFT RESISTOR
Q202
CLOCK SHIFTER
Q201
2SC2712 GR
RESET
Q203
ØTA144EK
KEY CONTROL
Q330
ØTA143EK
Q421
2SA1318TU
LEØ ØRIVER
Q502
MOTOR ØRIVE
Q501, 503
SOLENOIØE ØRIVE
Q504, 506~508
MVR MOTOR ØRIVE
IC403 TC4094BF
IC1
LB9051A
IC2
ØN6851
CON104
W103
TO CØMECHANISM 4ZG-1 3CØ C.B
CON501
W501
CON1
Q1
2SA933S
MOTOR SPEEØ SW
M1
ØECK MOTOR
G DECK C.B
SIGNAL PB/MIC
TAPE
ØEMØ
REC
POWER
ØOLBY
H/N-ØUB
TUNER
VIDEØ AUX
CØ
ØOWN
UP
HSP
LEØ406
LEØ427, 429, 424, 426:SLZ-738A-24-S
LEØ425, 428:SLZ-936C-30-S
LEØ407~414:SEL1510CMZ
LEØ401~406:SEL1550CM TP8
LEØ420~423:SLP9118C-51-S-T1
※ O:N-CH ØØ
+VM
MS
R806 10k
R277 47k
R269 100
R270 100
R271 100
R210 22k
R517 47k
C201 4.7/50 7L
C202 4.7/50 7L
C203 47/50
C205 100/10
C206 220/10
C207 1/50
C208 0.1
C209 39p
C210 18p
C211 47p
C212 10/16
C213 0.1
C214 0.1
C215 0.1
C250 1000p
C401 0.1
ØD204 HZS11A3L
ØD200 1SS132
ØD201 UTZJ6.2B
ØD202 MTZJ5.1B
ØD203 BAN202K
ØD242 1SS132
R414 1k
R415 1k
R416 1k
R417 2.2k
R418 2.2k
R419 10k
R420 100 1/8W
R422 2.2k
R423 2.2k
R503 1.2k
R502 2.2k
R501 2.2k
R504 680
R505 680
R506 390
R507 33
R508 2SØ655E
R509 5k
R510 1k
R511 2.2k
R512 4.7k
R513 5k
R514 4.7k
R231 100
R235 15k
R236 2.2k
R237 2.2k
R238 100k
R239 100k
R240 1M
R241 100k
R242 4.7k
R243 470k
R245 1k
R246 1k
R125 100k
R127 470k
R128 100k
R131 1k
R132 1k
R133 1k
R114 1k
R115 1k
R116 1k
R117 1k
R118 1k
R119 1k
R120 1k
R121 1k
R122 00
R123 1k
R807 2.2M
R204 470
R209 56k
R230 100k
R245 1k
R261 100
R262 100
R263 100
R264 100
R265 100
R266 100
R267 100
R519 47k
R520 47k
R521 4.7k
R523 330
R522 330
R516 47k
R515 47k
R518 47k
R524 220
R1 100K
R2 3.9K
R3 8.2k
R4 3.3K SFR
R300 10k
R320 10k
R330 10k
R340 10k
R360 100k
R341 1k
R342 820
R343 1k
R301 1k
R302 820
R321 1k
R322 820
R331 2.2k
R332 2.2k
R333 2.2k
R334 2.2k
R335 2.2k
R361 2.2k
R362 2.2k
R363 2.2k
R364 2.2k
R365 2.2k
R405 1k
R406 1k
R407 820
R408 820
R409 820
R410 820
LEØ405
LEØ406
LEØ407
LEØ408
LEØ409
LEØ410
LEØ411
LEØ412
LEØ413
LEØ414
LEØ420
LEØ421
LEØ422
LEØ423
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
S1 (CST1)
S2 (AUTO1)
S3 (CAM1)
S4 (AUTO2)
S5 (CAM2)
S301
S302
S321
S322
S341
S342
X201 5.76MHz
SOL1
SOL2
MOTOR
C1
C2
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
F-ST
F-CL
F-ØA
F-ØT
F-CL
F-ØA
F-ØT
ØN
ØFF
ØUP
ØOWN
ØØ3
ØØ2
ØØ1
ØØ3
ØØ2
ØØ1
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
P23
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
G11
F1
F1
VØØ1
VØØ2
-VP
ØSC1
ØSC2
ØSC3
ØSC4
ØSC5
ØSC6
ØSC7
ØSC8
ØSC9
ØSC10
ØSC11
ØSC12
ØSC13
ØSC14
ØSC15
ØSC16
ØSC17
ØSC18
ØSC19
ØSC20
ØSC21
ØSC22
ØSC23
ØSC24
ØSC25
ØSC26
ØSC27
ØSC28
ØSC29
ØSC30
ØSC31
ØSC32
ØSC33
ØSC34
ØSC35
ØSC36
ØSC37
ØSC38
ØSC39
ØSC40
ØSC41
ØSC42
ØSC43
ØSC44
ØSC45
ØSC46
ØSC47
ØSC48
ØSC49
ØSC50
ØSC51
ØSC52
ØSC53
ØSC54
ØSC55
ØSC56
ØSC57
ØSC58
ØSC59
ØSC60
ØSC61
ØSC62
ØSC63
ØSC64
O-POWER
O-SOL1
O-SOL2
O-MOTOR
O-KEY.SCAN
O-F/STB
O-F/CLK
O-F/ØATA
VSS2
IO-BUS0
IO-BUS1
IO-BUS2
IO-BUS3
O-CCE
O-CØ/SQ.CLK
O-MUTE
O-PLL CE
O-KOE/ O-PB
O-M/STB
O-M/ØATA
O-M/CLK
O-BSP/CE
RESET
I-STEREØ
I-TUNE/IFC
VSS1
CF1
CF2
VØØ1
I-KEY1
I-KEY2
I-KEY3
I-CØ/SW
I-CØ/ØISH
I-MS
I-SPEANA
I-MIC
I-TM/BASE
I-HØLØ
I-RMC
O-ØI/F
O-ØI/R
O-OPEN
O-CLOSE
P9/ØIRT
P8/CØG
P7/K-CØN
P6/ØSP
P5/ØBE
P4/SW
P3/LW
P2/AM10K
P1/AM-ST
P10/FM-WIØE
P11/REØ
P12/REA
P13/CST2
P14/AUTØ2
P15/CAM2
P16/CAM1
P17/AUTØ1
P18/CST1
BUS2
BUS1
BUS0
CCE
CØ.LEØ
BUCK
BUS3
I-CØ/SW
O-CLOSE
O-OPEN
O-ØI/F
O-ØI/R
I-CØ/ØISH
(CST 2)
(REC2)
(CAM 2)
SOL2
AUTO 1
SOL1
AUTO 2
GNØ
MOTOR
(LH2)
(LH1)
(CAM 1)
(CST 1)
(REC1)
W1
W2
W3
W4
L
H
⊕
-


B FRONT C. B
FROM G DECK C.B
CON1
W501
TO CON501
FROM CD MECHANISM 4ZG-1 3CD C.B
W130
TO CON104
VR602
MIC MIXING
MAX.↔.MIN
D350 DIRT
D344 LW
D341 NO-ECHO
FL101 DISPLAY
V ONLY
S330 HALL
S331 LIVE
S332 DISCO
S327 ROCK
S328 POP
S329 CLASSIC
S341 DEMO
S347 T-BASS
S321 POWER
W301
RED
BRN
W130
CON701
TO A MAIN C.B
CON601
J601 MIC 1
J621 MIC 2
W601
W302
S351 DISC 1
S350 DISC 2
S349 DISC 3
DISC DIRECT PLAY
S352 DISC CHANGE
S353 OPEN/CLOSE
D KEY C. B
LED424, 425, 426
LED427, 428, 429
DECK LIGHT
PIN701
MVR741
VOLUME
MAX.↔.MIN
C MVR C. B
LED405
S326
UP
LED406
S325
DOWN
LED403
S305
CLEAR
S323
SET
LED401, 402
S324
DIRECTION/PRESET
LED407, 408, 420
S345
CD
LED409, 410, 421
S342
TAPE (DECK 1/2)
S346
VOCAL FADER/ MULTIPLEX
LED411, 412, 422
S344
AUX/VIDEO
S304
CD EDIT/ CHECK
LED413, 414, 423
S343
TUNER
S303
REV MODE (DECK 2/2)
S322
REC/ REC MUTE
S302
DOLBY NR
S301
SYNC DUB NORM/HIGH

BLOCK DIAGRAM-1 (MAIN / FRONT)



FROM
B FRONT C.B
CON501
W501
1
15

SW8 (REC2)
SW7 (CAM2)
SW6 (CST2)
SW5 (LH2)
SW4 (REC1)
SW3 (CAM1)
SW2 (CST1)
SW1 (LH1)

CON1
C1
C2
Q1
E C B
BFR1
R1
R2
SOL2
SOL1
WHT
XXX
L
H
+
−
M1
(DECK MOTOR)

G DECK C.B

I
RELAY-2
C.B

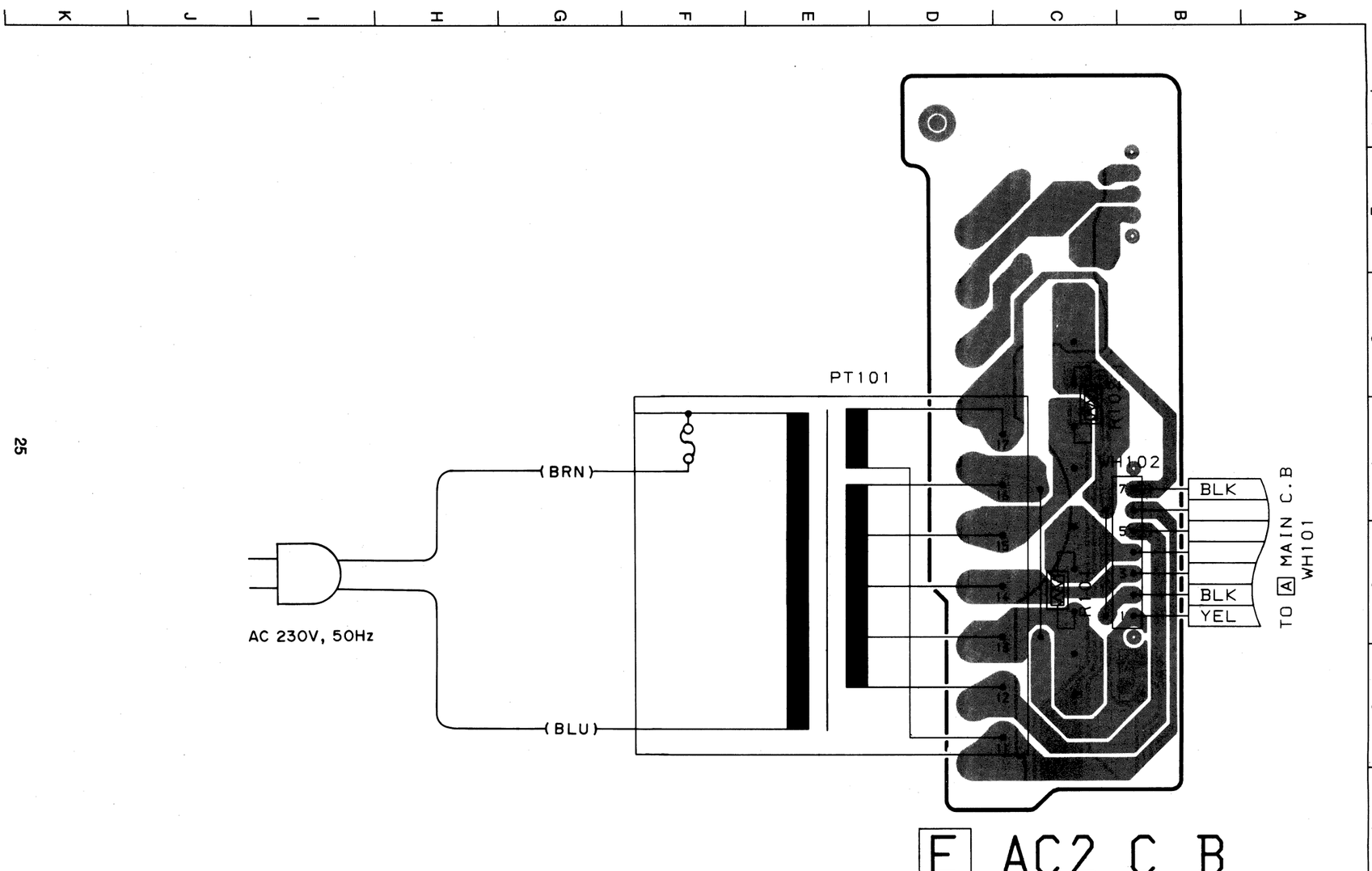
EH
BH
LH
R
PH
(WHT)
(BLK)
(WHT)
(PNK)
(PNK)
(WHT)
(BLK)
(WHT)
(WHT)
(PNK)
(RED)
(BLK)
(WHT)
(PNK)
(PNK)
(WHT)
1
3
5
7
8
W105
A TO MAIN C.B PIN351

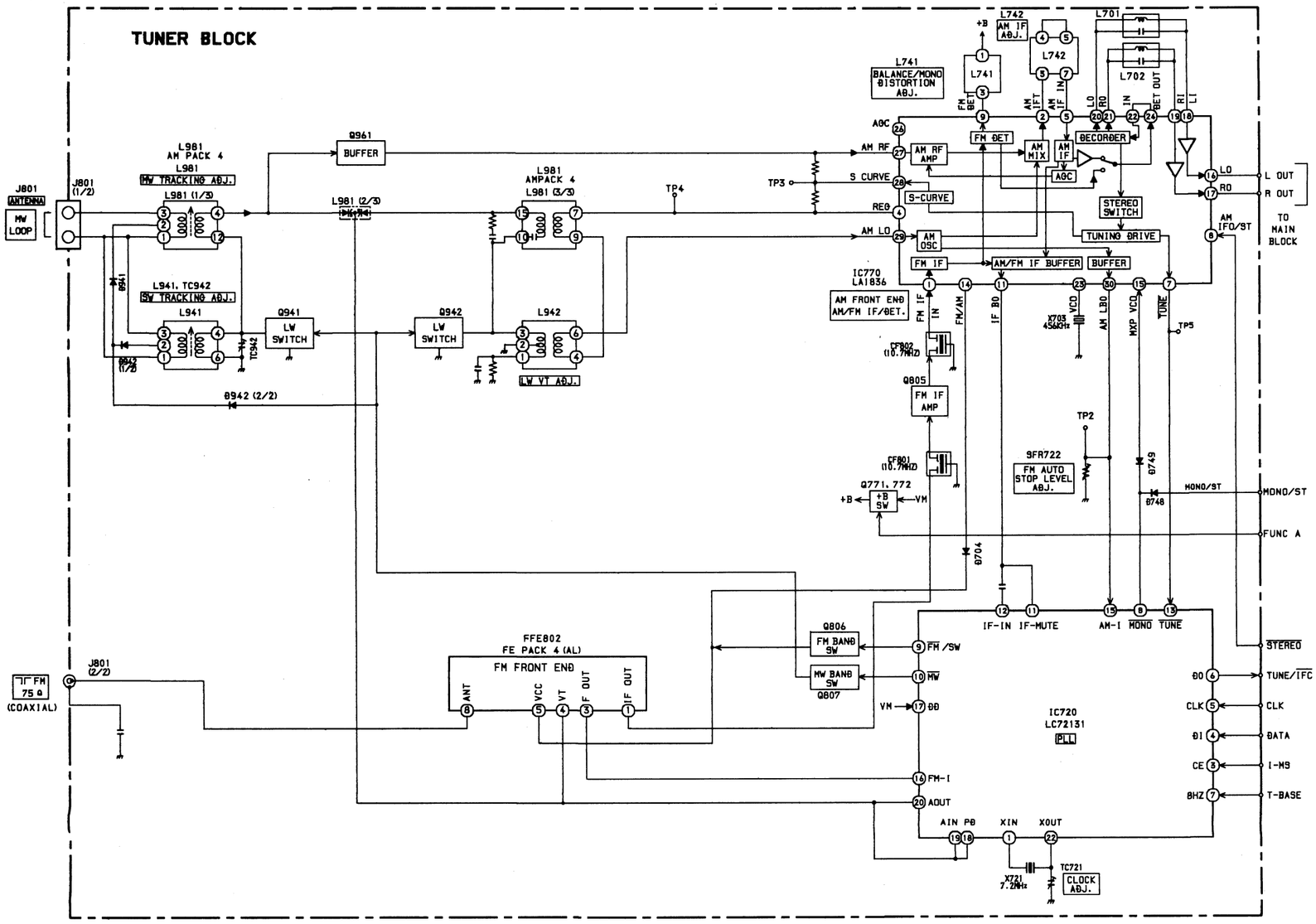
(BLU)
(BRN)
(YEL)
(BLK)
(RED)
(WHT)
RPH
(DECK2)

H
RELAY-1
C.B

LH
R
(WHT)
(BLK)
(PNK)
(GRY)
(WHT)
(BLK)
(PNK)
1
3
W106
A TO MAIN C.B PIN301

(WHT)
(RED)
(BLK)
PH
(DECK1)


PT101
WH102
BLK
BLK
YEL
TO A MAIN C.B
WH101
(BRN)
(BLU)
AC 230V, 50Hz
E AC2 C.B


TUNER BLOCK
J801 ANTENNA
MW LOOP
J801 (1/2)
L981 AM PACK 4
L981 MW TRACKING ADJ.
L981 (1/3)
L981 (2/3)
L981 AMPACK 4
L981 (3/3)
L941, TC942
SW TRACKING ADJ.
L941
L942
LW VT ADJ.
Q961 BUFFER
Q941 LW SWITCH
Q942 LW SWITCH
D942 (1/2)
D942 (2/2)
D941
TC942
TP4
TP3
L741 BALANCE/MONO DISTORTION ADJ.
L742 AM IF ADJ.
L701
L702
AGC
AM RF
S CURVE
RE0
AM LO
AM RF AMP
S-CURVE
AM OSC
FM DET
AM MIX
AM IF
DECORDER
AGC
STEREO SWITCH
TUNING DRIVE
FM IF
AM/FM IF BUFFER
BUFFER
L OUT
R OUT
TO MAIN BLOCK
AM IFO/ST
IC770 LA1836
AM FRONT END AM/FM IF/DET.
FM IF IN
FM/AM
IF BO
VCO
AM LBO
MXP VCO
TUNE
TP5
X703 456KHz
CF802 (10.7MHZ)
Q805 FM IF AMP
CF801 (10.7MHZ)
Q771, 772 +B SW
VM
TP2
SFR722 FM AUTO STOP LEVEL ADJ.
D749
D748
MONO/ST
FUNC A
D704
IF-IN IF-MUTE
AM-I MONO TUNE
STEREO
J801 (2/2)
FM 75Ω (COAXIAL)
FE802 FM FRONT END
ANT VCC VT F OUT IF OUT
Q806 FM BAND SW
MW BAND SW Q807
FM /SW
MW
BO
FM-I
AOUT
IC720 LC72131 PLL
AIN PD XIN XOUT
X721 7.2MHz
TC721 CLOCK ADJ.
BO TUNE/IFC
CLK CLK
DI DATA
CE I-MS
BHZ T-BASE
TO MAIN BLOCK

IC DESCRIPTION

IC, LC866432V-5752

Pin No.	Pin Name	I/O	Description
1	O - PLL CE	O	PLL IC chip enable .
2	O - KC / CE	O	Key control IC data latched strobe output .
3	O - M / STB	O	Main shift register data latch strobe output .
4	O - M / DATA	O	Main shift register ,PLL/Key control / DSP related data output .
5	O - M / CLK	O	Main shift register , PLL/Key control / DSP related clock .
6	O - DSPCE	O	DSP data latch strobe output .
7	$\overline{\text{RESET}}$	I	Reset input .
8	I - $\overline{\text{STEREO}}$	I	Tuner stereo detected input .
9	I - $\overline{\text{TUNE}}$ / IFC	I	Tuner $\overline{\text{SD}}$ detected input . IF count serial data input .
10	VSS1	-	GND .
11,12	CF1, 2	-	5.75MHz oscillator circuit .
13	VDD1	-	Power supply input .
14~16	I - KEY1 ~ 3	I	Key input . (A/D)
17	I - CD / SW	I	CD mechanical switch A/D converter input .
18	I - CD / DISH	I	CD turntable photo sensor A/D converter input .
19	I - MS	I	Deck music sensor signal input .
20	I - SPEANA	I	A / D input for spectrum analyzer display .
21	I - MC	I	Microphone input for auto VF display .
22	I - TM BASE	I	Reference clock input for timer watch .
23	I - $\overline{\text{HOLD}}$	I	Power failure deteched input. "L" to stop clock and maintain memory .
24	I - $\overline{\text{RMC}}$	I	System remote control signal input .
25 ~ 35	G1 ~ G11	O	FL grid output G11- G1 .
36 ~ 40	P23 ~ P19	O	FL segment output P23 ~ P19 .
41	VDD2	-	Power supply input .
42	-VP	-	Power supply input (-34.5V) for FL display .
43	P18 / $\overline{\text{CST1}}$	O / I	FL segment output P18, DECK1 cassette detect switch data input .
44	P17 / $\overline{\text{AUTO1}}$	O / I	FL segment output P17, DECK1 auto stop signal input .
45	P16 / $\overline{\text{CAM1}}$	O / I	FL segment output P16, DECK1 cam switch data input .
46	P15 / $\overline{\text{CAM2}}$	O / I	FL segment output P15, DECK2 cam switch data input .
47	P14 / $\overline{\text{AUTO2}}$	O / I	FL segment output P14, DECK2 auto stop data input .
48	P13 / $\overline{\text{CST2}}$	O / I	FL segment output P13, DECK2 cassette detect switch data input .
49	P12 / REA2	O / I	FL segment output P12, DECK2 side-A record OK switch data input .
50	P11 / REB2	O / I	FL segment output P11, DECK2 side-B record OK switch data input .
51	P10 / FM - WIDE	O / I	FL segment output P10, FM wide mode data input to diode .
52	P1 / AM - ST	O / I	FL segment output P1, AM stereo mode data input to diode .
53	P2 / AM10K	O / I	FL segment output P2, AM 10kHz step data input to diode .
54	P3 / LW	O / I	FL segment output P3, LW mode data input to diode .
55	P4 / SW	O / I	FL segment output P4, SW mode data input to diode .
56	P5 / BBE	O / I	FL segment output P5, BBE mode data input to diode .
57	P6 / DSP	O / I	FL segment output P6, DSP data input to diode .

Pin No.	Pin Name	I/O	Description
57	P6 / DSP	O / I	FL segment output P6, DSP data input to diode .
58	P7 / KEY- CON	O / I	FL segment output P7, key control data input to diode .
59	P8 / CDG	O / I	FL segment output P8, CDG data input to diode .
60	P9	O	FL segment output P9 .
61	O - CLOSE	O	CD tray close data output .
62	O - OPEN	O	CD tray open data output .
63	O - DI / R	O	CD turntable reverse rotation output .
64	O - DI / F	O	CD turntable forward rotation output.
65	O - $\overline{\text{POWER}}$	O	System power supply $\overline{\text{ON}}$ / OFF output .
66	O - $\overline{\text{SOL1}}$	O	DECK1 solenoid output .
67	O - $\overline{\text{SOL2}}$	O	DECK2 solenoid output .
68	O - $\overline{\text{MOTOR}}$	O	DECK motor output .
69	O - $\overline{\text{KEY. SCAN}}$	O	Switch scan timing output .
70	O - F / STB	O	Front shift register , data latch strobe output .
71	O - F / CLK	O	Front shift register , data transfer clock output .
72	O - F / DATA	O	Front shift register , data output .
73	VSS2	-	GND .
74	IO - BUS0	I / O	CD IC control data bus input / output .
75	IO - BUS1	I / O	CD IC control data bus input / output .
76	IO - BUS2	I / O	CD IC control data bus input / output .
77	IO - BUS3	I / O	CD IC control data bus input / output .
78	O - $\overline{\text{CCE}}$	O	CD IC control chip enable output .
79	O - CD / SQ.CLK	O	CD IC control data bus clock output .
80	O - $\overline{\text{MUTE}}$	O	System mute output .

IC, BA3834S

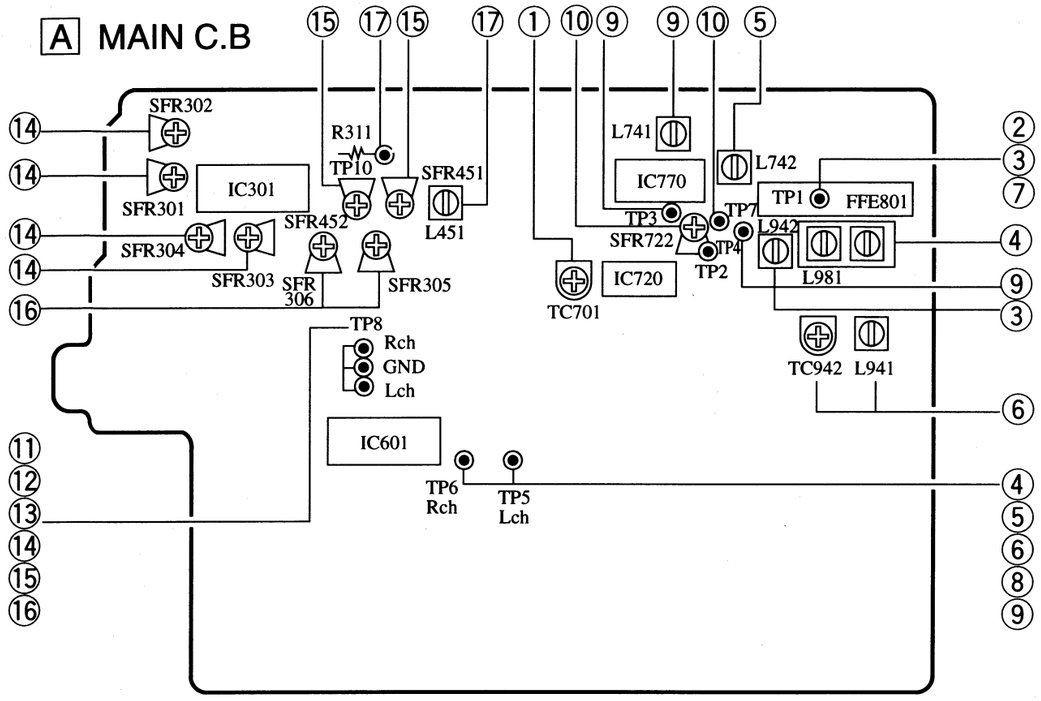
Pin No.	Pin Name	I/O	Description
1	BIASC	–	Decoupling capacitor for linear VREF connecting terminal.
2	VREFC	–	Decoupling capacitor for logic VREF connecting terminal.
3	RREF	–	Reference resistor for setting band pass filter for connecting terminal.
4, 5	NC	–	Not used.
6	DIFOUT	O	Differential amplifier output terminal.
7	CIN	I	Differential amplifier input terminal 2.
8	AIN	I	Differencial amplifier input terminal 1.
9	VCC	–	Nominally 5V.
10	A	O	Output selection control terminals (see table – 1).
11	B		
12	C		
13	SEL		
14, 15	NC	–	Not used.
16	TEST	–	Connected to ground.
17	A-OUT	O	Multiplexer output terminal.
18	GND	–	Ground.

Table – 1. Filter Select Table

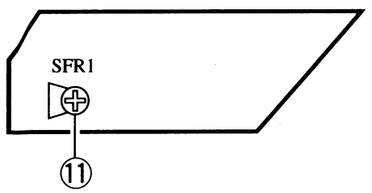
SEL	A	B	C	AOUT
0	X	X	X	GND
1	0	0	0	GND
1	0	0	1	68Hz
1	0	1	0	170Hz
1	0	1	1	420Hz
1	1	0	0	1kHz
1	1	0	1	2.4kHz
1	1	1	0	5.9kHz
1	1	1	1	14.4kHz

IC, LC72131

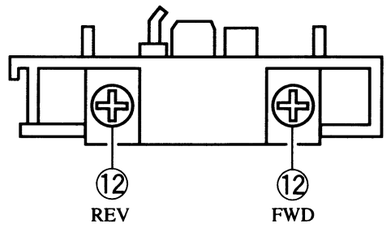
Pin No.	Pin Name	I/O	Description
1	XI	–	A crystal oscillator (7.2MHz) is connected between these pins.
22	XO	–	
2	NC	–	Not used.
3	CE	I	To enable the IC. Active "H".
4	DI	I	Digital data input from CPU (LC866432V–5751) when relevant key is operated. Active "H".
5	CLK	I	To clock in the data DI.
6	DO	O	Digital data output to CPU (LC866432V–5751).
7	TM-BASE	O	Outputs a reference clock signal (8Hz) for the clock.
8	$\overline{\text{MONO}}$/ST BEAT	O	Outputs "H" when MONO/ST BEAT is switched.
9	$\overline{\text{FM/SW1}}$	O	Output "L" or "H" as follows: 2 BAND: AM H, FM L 3 BAND: LW H, MW H, FM L 4 BAND: LW H, SW1 L, SW2 H, FM L
10	$\overline{\text{MW/SW2}}$	O	Outputs "L" or "H" as follows: 2 BAND: AM L, FM L 3 BAND: LW H, MW L, FM L 4 BAND: LW H, SW1 H, SW2 L, FM L
11	$\overline{\text{IF-MUTE}}$	O	To control internal counter.
12	IFIN	I	General purpose counter input.
13	$\overline{\text{TUNE}}$	I	Receives "L" when station is tuned.
14	NC	–	Not used.
15	AM-I	I	Receives the AM local oscillator frequency signal.
16	FM-I	I	Receives the FM local oscillator frequency signal.
17	VDD	–	Supply power to IC (+5V).
18	PD	O	PLL charge pump output.
19	AIN	I	Nch MOS transistor for PLL active low pass filter.
20	AOUT	O	
21	VSS	–	Ground.



G DECK C.B



DECK-1P, DECK-2R/P/E HEAD



<TUNER SECTION>

1. Clock Frequency Adjustment
   Settings: • Test point: TP2 (CLK IC770 pin30)
   • Adjustment location: TC701
   Method: Set to MW 1602kHz and adjust TC701 so that the test point becomes 2052kHz±0.01 kHz.

2. MW VT Check
   Settings: • Test point: TP1 (VT)
   Method: Set to MW 1602kHz and check that the test point is 6.8V±1.0V.

3. LW VT Adjustment
   Settings: • Test point: TP1 (VT)
   • Adjustment location: L942
   Method: Set to LW 144kHz and adjust L942 so that the test point becomes 1.5V±0.05V.

4. MW Tracking Adjustment
   Settings: • Test point: TP5, TP6
   • Adjustment location: L981
   Method: Set to MW 999kHz and adjust L981 so that the test point becomes maximum.

5. AM IF Adjustment
   Settings: • Test point: TP5, TP6
   L742 ..... 450kHz

6. LW Tracking Adjustment
   Settings: • Test point: TP5, TP6
   • Adjustment location:
   L941 ..... 144kHz
   TC942 ..... 290kHz
   Method: Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

7. FM VT Check
   <EXCEPT V>
   Settings: • Test point: TP1 (VT)
   Method: Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 1.5V (87.5MHz) and less than 8.2V (108.0MHz).
   <V>
   Settings: • Test point: TP1 (VT)
   Method: Set to FM 65MHz, 108.0MHz and check that the test point is more than 0.9V (65MHz) and less than 9.0V (108.0MHz).

8. FM Tracking Check
   <EXCEPT V>
   Settings: • Test point: TP5, TP6
   • Input level: 10dB
   Method: Set to FM 98.0MHz and check that the test point is 6±6dB.
   <V>
   Settings: • Test point: TP5, TP6
   Method: Set to FM 98.0MHz and check that the test point is 2±6dB.

9. DC Balance/Mono Distortion Adjustment
   Settings: • Test point: TP3, TP4 (DC balance)
   TP5, TP6 (Distortion)
   • Adjustment location: L741
   • Input level: 54dB
   Method: Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V±0.04V.
   Next, check that the distortion is less than 1.3%.

10. Auto Stop Level Adjustment
    Settings: • Test point: TP7
    • Adjustment location: SFR722
    • Input level: 16dB
    Method: Set to FM 98.0MHz and adjust voltage low (about 0.01V) by SFR722. After that voltage high (about 7.0V) out by 2dB down.

<DECK SECTION>

11. Tape Speed Adjustment
Settings:
- Test tape: TTA-100 (DECK2)
- Test point: TP8
- Adjustment location: SFR1

Method: Play back the test tape by DECK2 and adjust SFR1 so that the frequency counter reads 3000Hz±5Hz.

12. Azimuth Adjustment (DECK1, DECK2)
Settings:
- Test tape: TTA-310
- Test point: TP8
- Adjustment location: Head azimuth adjustment screw

Method: Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.

13. PB Frequency Response Check (DECK1, DECK2)
Settings:
- Test tape: TTA-300
- Test point: TP8

Method: Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal is with respect to that of the 315Hz signal is ±2dB.

14. PB Sensitivity Adjustment
Settings:
- Test tape: TTA-200
- Test point: TP8
- Adjustment location:
  SFR301 (DECK1, Lch)
  SFR302 (DECK1, Rch)
  SFR303 (DECK2, Lch)
  SFR304 (DECK2, Rch)

Method: Play back the test tape and adjust SFRs so that the output level of the test point becomes 300mV.

15. REC/PB Frequency Response Adjustment
Settings:
- Test tape: TTA-602
- Test point: TP8
- Input signal: 1kHz/10kHz (LINE IN)
- Adjustment location: SFR451 (Lch)
  SFR452 (Rch)

Method: Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8 becomes 21mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB±0.5dB with respect to that of the 1kHz signal.

16. REC/PB Sensitivity Adjustment
Settings:
- Test tape: TTA-602
- Test point: TP8
- Input signal: 1kHz (LINE IN)
- Adjustment location: SFR305 (Lch)
  SFR306 (Rch)

Method: Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8 becomes 21mV. Record and play back the 1kHz signals and adjust SFRs so that the output is 21mV±0.5dB.

17. Bias OSC Frequency Adjustment
Settings:
- Test tape: TTA-601
- Test point: TP10 (R311)
- Adjustment location: L451

Method: Set to the REC mode. Adjust L451 so that the frequency counter of the test point becomes minimum.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitiviy: (THD 3%)	EE, K, EZ, EEZ: 6dB±6dB (87.5/98.0/108.0MHz)
	V: 6dB±5dB (65.0/70.0/74.0MHz)
S/N 50dB Quieting sensitivity:	EE, K: 35dB±6dB (87.5/98.0/108.0MHz)
	EZ, EEZ: 36dB±6dB (87.5/98.0/108.0MHz)
	V: 33dB±7dB (65.0/70.0/74.0MHz)
Signal to noise ratio:	EE, K, EZ, EEZ: More than 64dB (98.0MHz)
	V: More than 61dB (70.0MHz)
Distortion:	EE, K, EZ, EEZ: Less than 1.2% (98.0MHz)
	V: Less than 1.2% (70.0MHz)
Stereo separation:	EE, K, EZ, EEZ: More than 22dB (98.0MHz)
	V: More than 22dB (70.0MHz)
Intermediate frequency:	10.7MHz

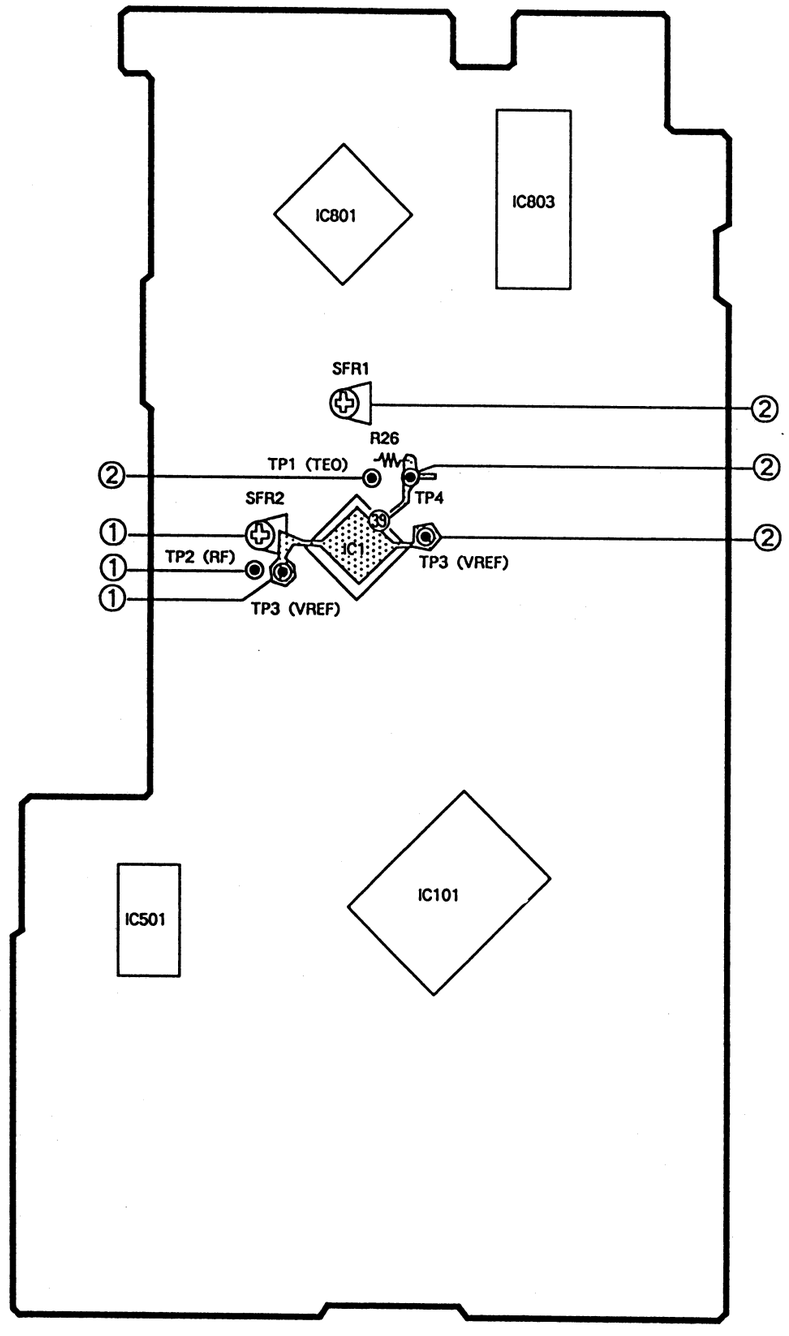
<AM (MW) SECTION>

Sensitivity: (S/N 20dB)	48～62dB [at 603kHz] 47～59dB [at 999/1404kHz]
Distortion:	Less than 1.5% [at 999kHz]
Intermediate frequency:	450kHz

<DECK SECTION>

Tape speed:	3000Hz±45Hz
Wow & flutter: (W.R.M.S)	Less than 0.4%
Take-up torque:	40～45g-cm (FWD, REV)
F.F torque:	75～180g-cm
REW torque:	75～180g-cm
Back tension:	2～7.0g-cm
PB Output level:	(DECK1, 2) 2.8V±1.5dB (SP OUT)
REC/PB Output level:	1.5±2.0dB (SP OUT)
Distortion (REC/PB):	Less than 2% (NORM, CrO_2)
Noise level (REC/PB):	Less than 8mV/15mV (DOLBY B NR ON/OFF NORM, SP OUT, Vol 2V)
	Less than 7mV/12mV (DOLBY B NR ON/OFF CrO_2, SP OUT, Vol 2V)
Crosstalk:	More than 60dB (1kHz, 0VU)
Erasing ratio:	More than 60dB (125Hz)
Channel separation:	More than 40dB (1kHz, 0VU)
REC bias frequency:	85kHz
Test tape:	NORMAL TTA-601/600
	CrO_2 TTA-610
	METAL TTA-630

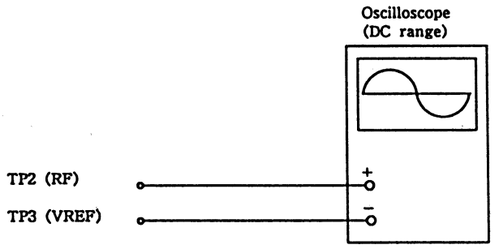
A 3CD C.B



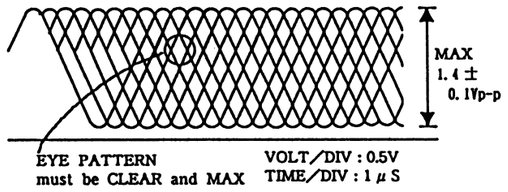
Note : Connect a probe (10 : 1) of the osilloscope to a test point.

1. Focus Bias Adjustment

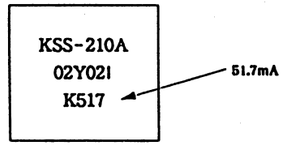
Make the focus bias adjustment when replacing and repairing the optical block.



1) Connect an oscilloscope to the test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR2 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.

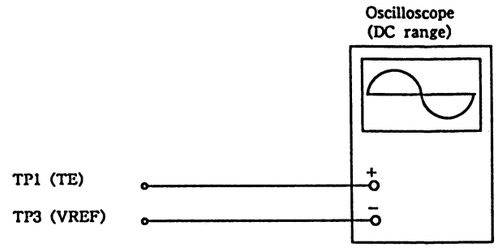


Note : The current of the laser signal can be checked with the voltages on both sides of R2 (10 Ω). The difference for the specified value shown on the lavel must be within ± 6.0mA.

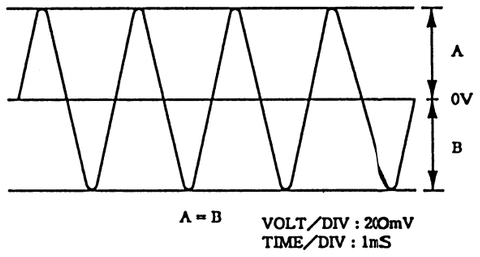


$$\text{Laser current } Iop = \frac{\text{Voltage across R2}}{10\,\Omega}$$

2. TRACKING Balance Adjustment

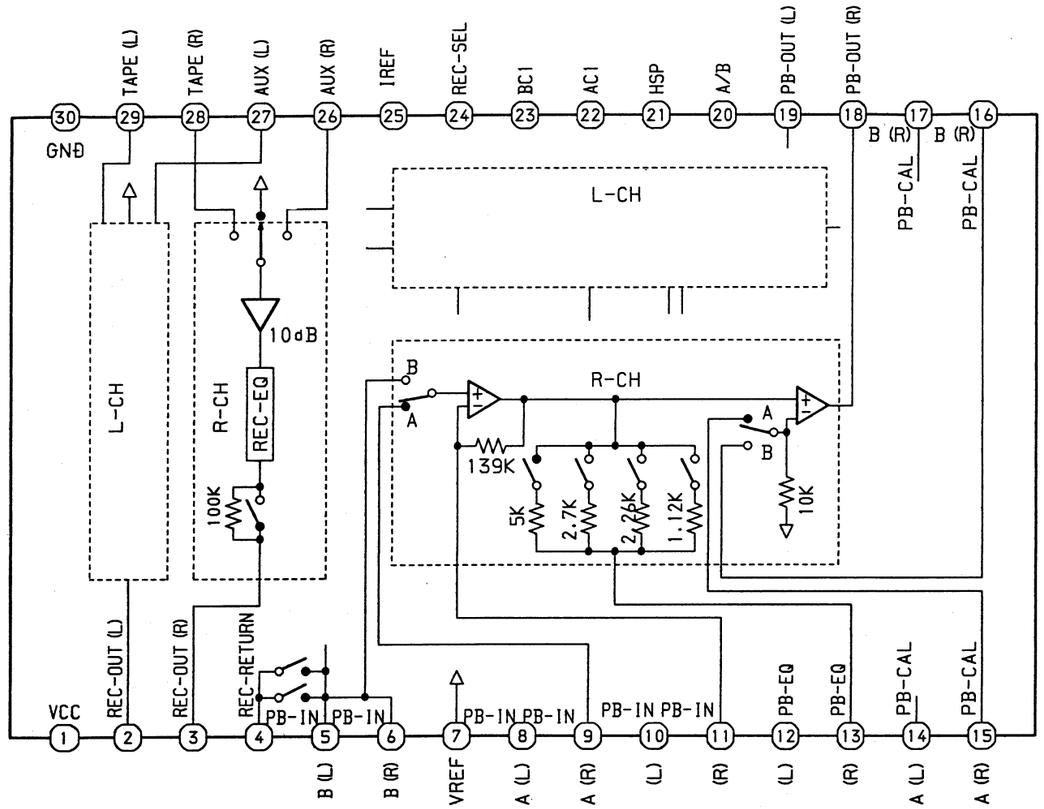


1) Short circut between TP3 (VREF) and TP4.
2) Connect an oscilloscope to the test points TP1 (TE) and TP3 (VREF).
3) Turn on the power switch.
4) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
5) Adjust SFR1 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the test point TP3 (VREF) and TP4.

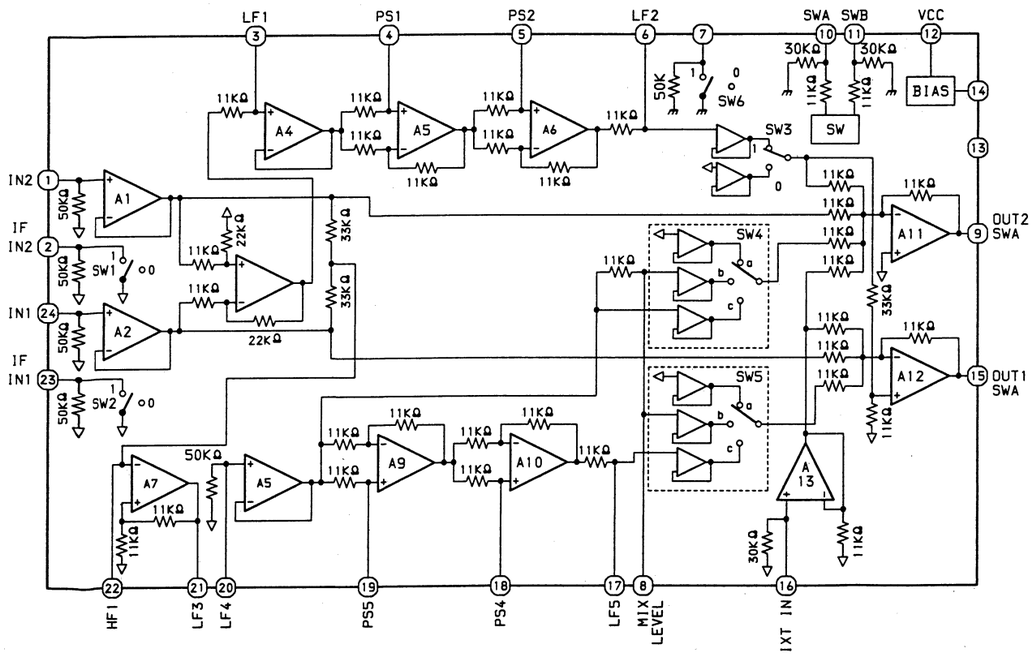


IC BLOCK DIAGRAM

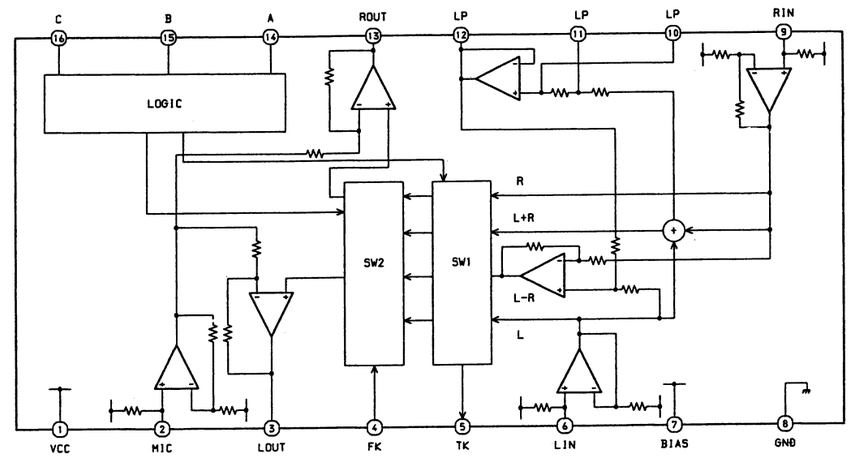
IC, HA12185NT



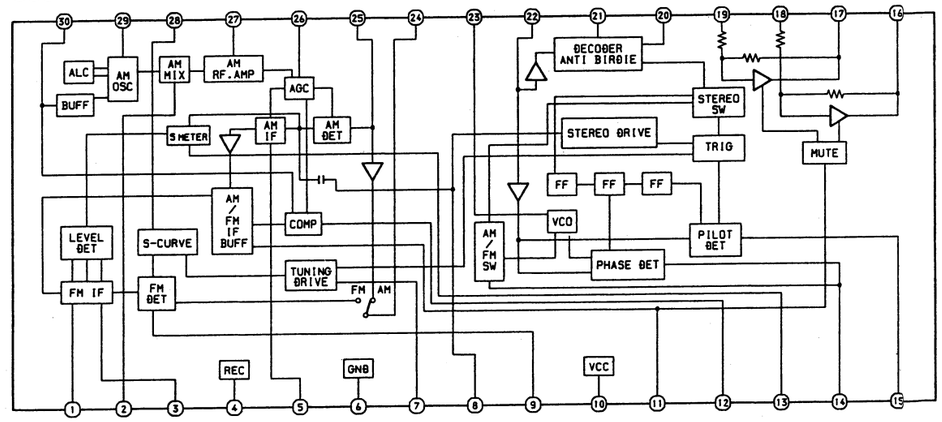
IC, TA2041F



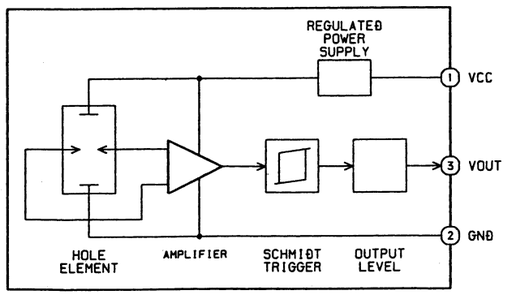
IC, BA3837



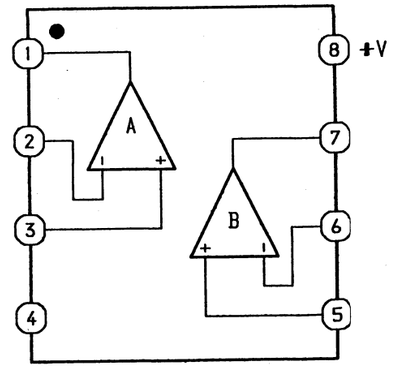
IC, LA1836



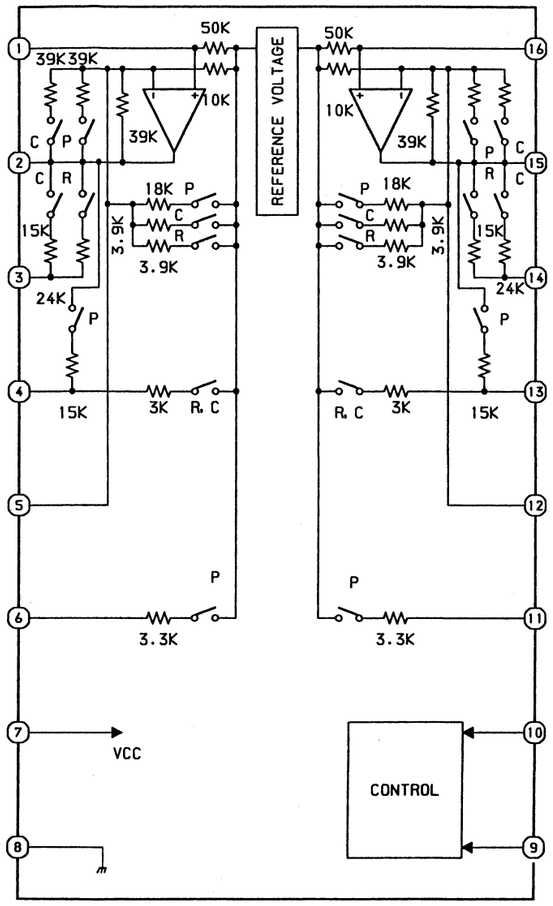
IC, DN6851



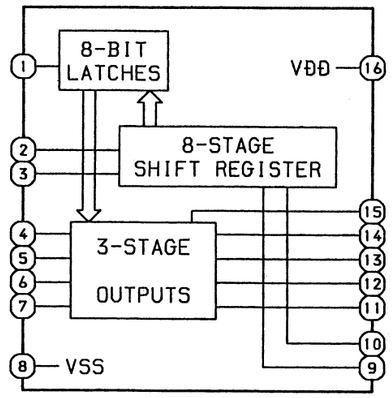
IC, NJM4558M



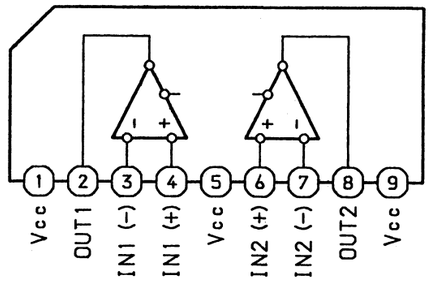
IC, M62412P



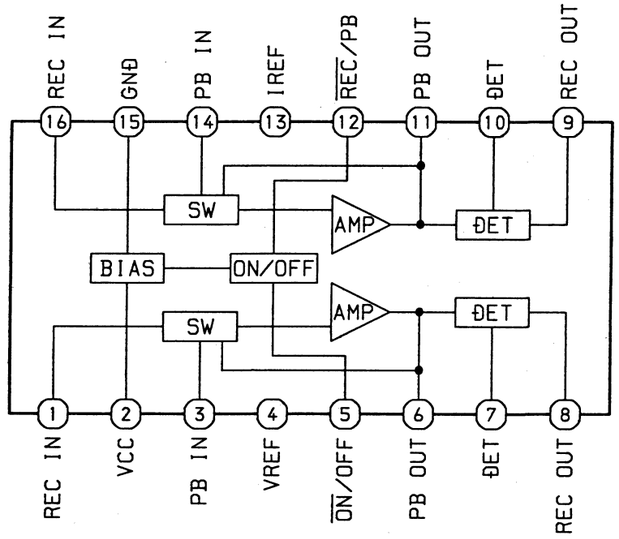
IC, TC4094BP / BF



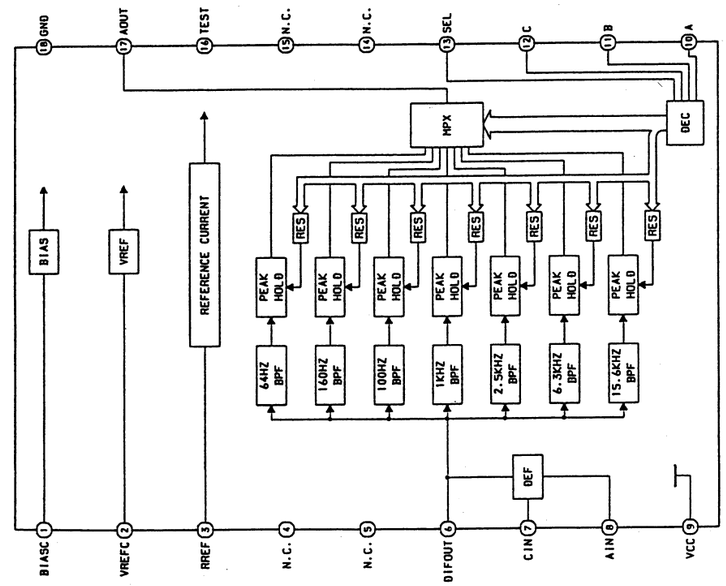
IC, NJM2068M-D (T1)



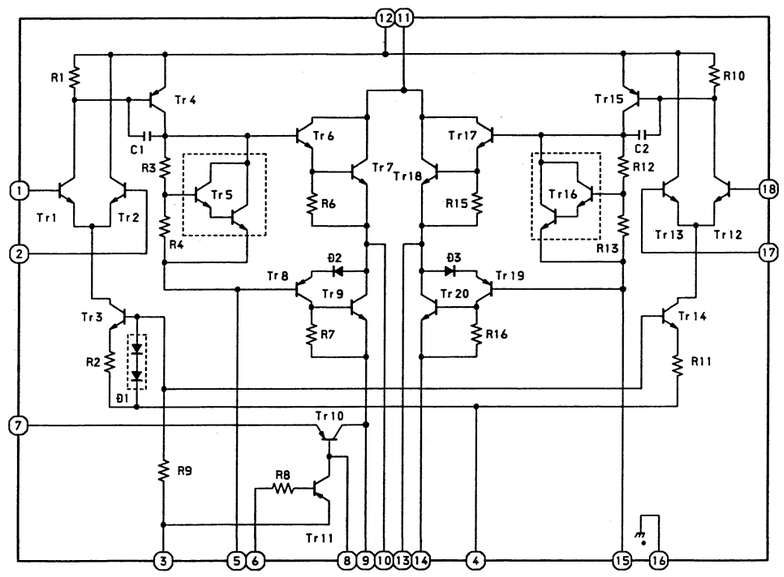
IC, HA12134A



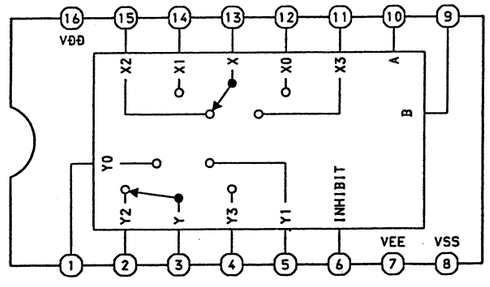
IC, BA3834S



IC, STK41422



IC, BU4052BCP

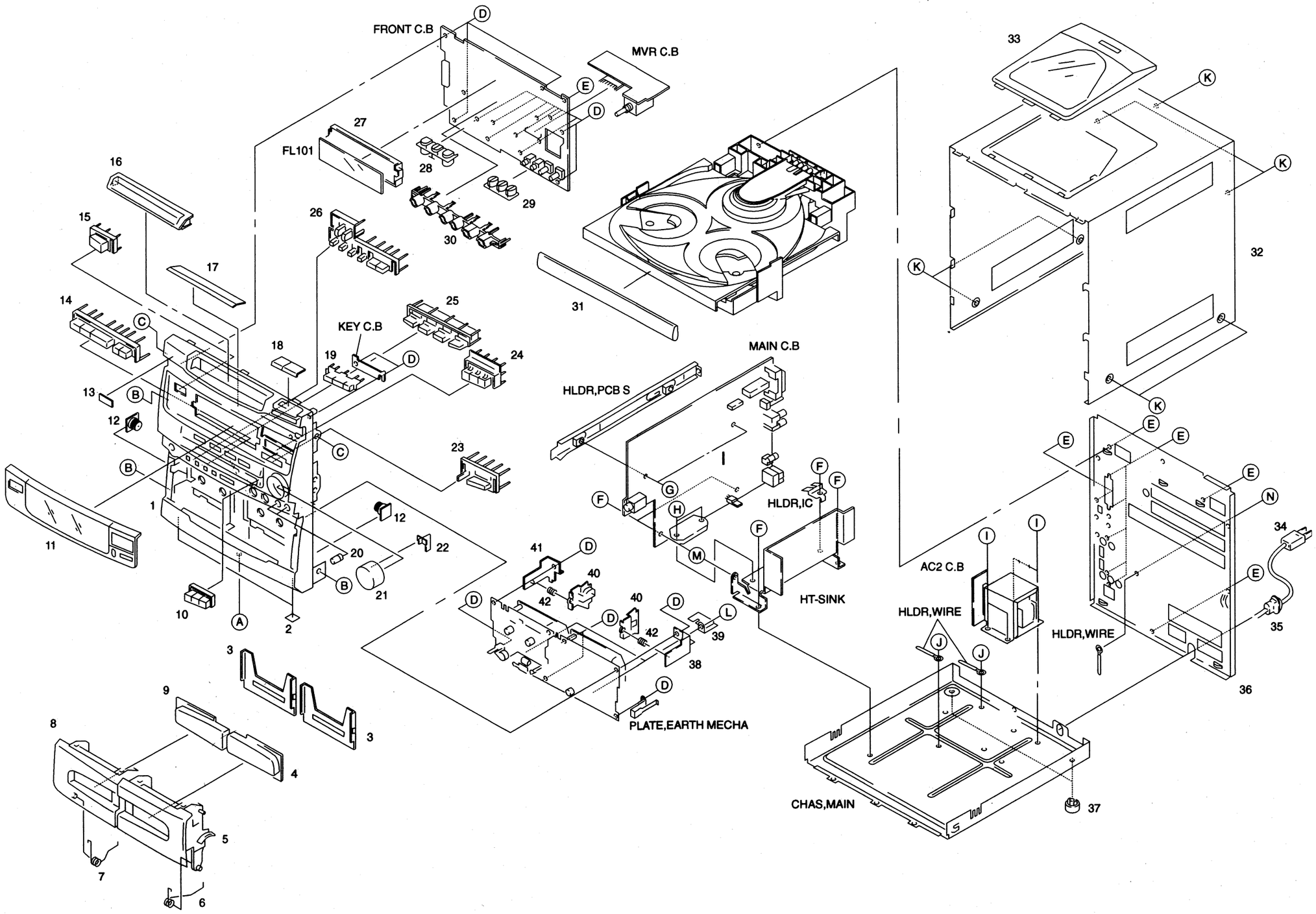


TRUTH TABLE

CONTROL INPUTS			ON SWITCH	
INHIBIT	B	A		
L	L	L	Y0	X0
L	L	H	Y1	X1
L	H	L	Y2	X2
L	H	H	Y3	X3
H	X	X	—	—

L:LOW LEVEL
H:HIGH LEVEL
H:IRRELEVANT

MECHANICAL EXPLODED VIEW 1 / 1

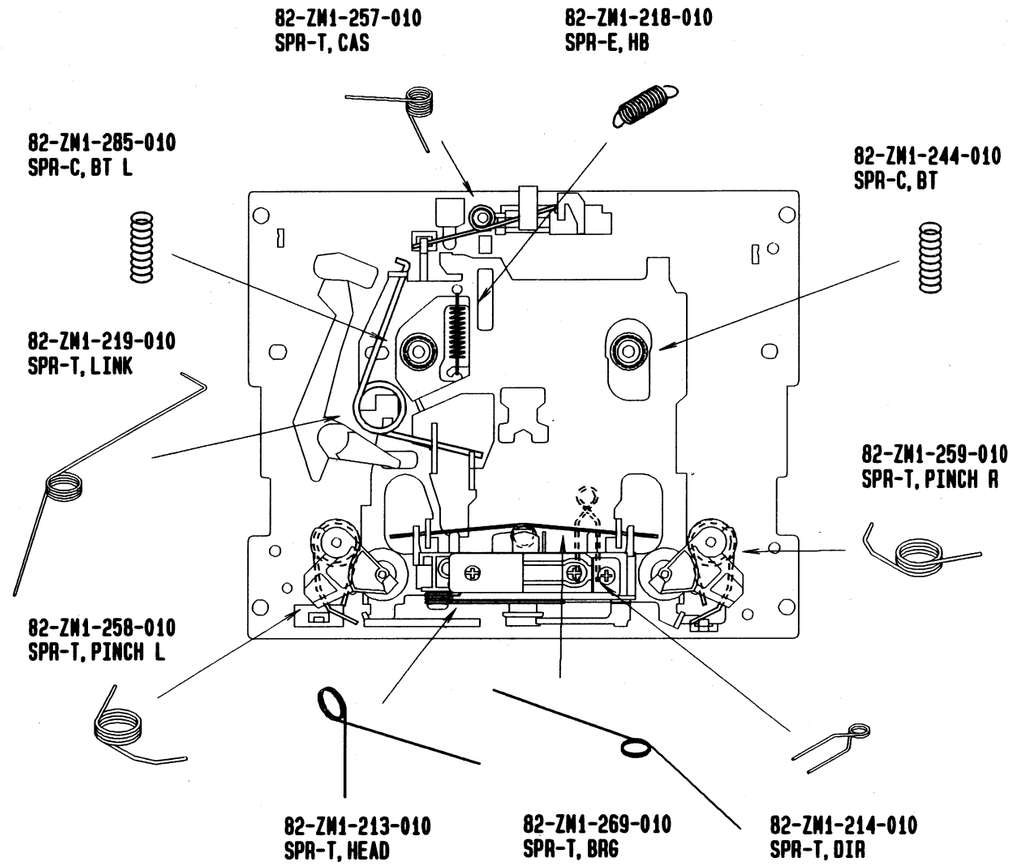


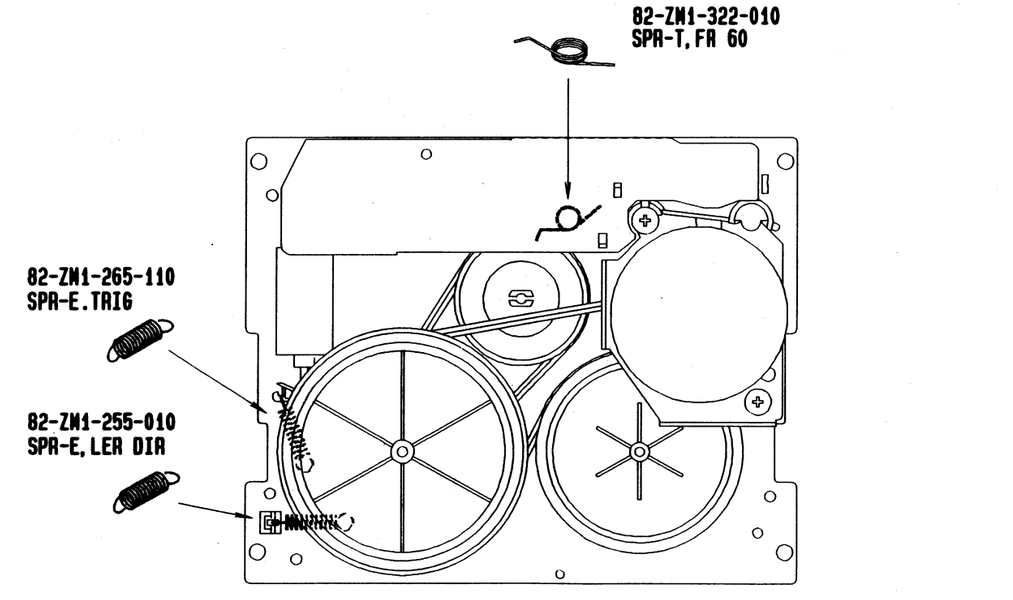
MECHANICAL PARTS LIST 1 ／ 1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

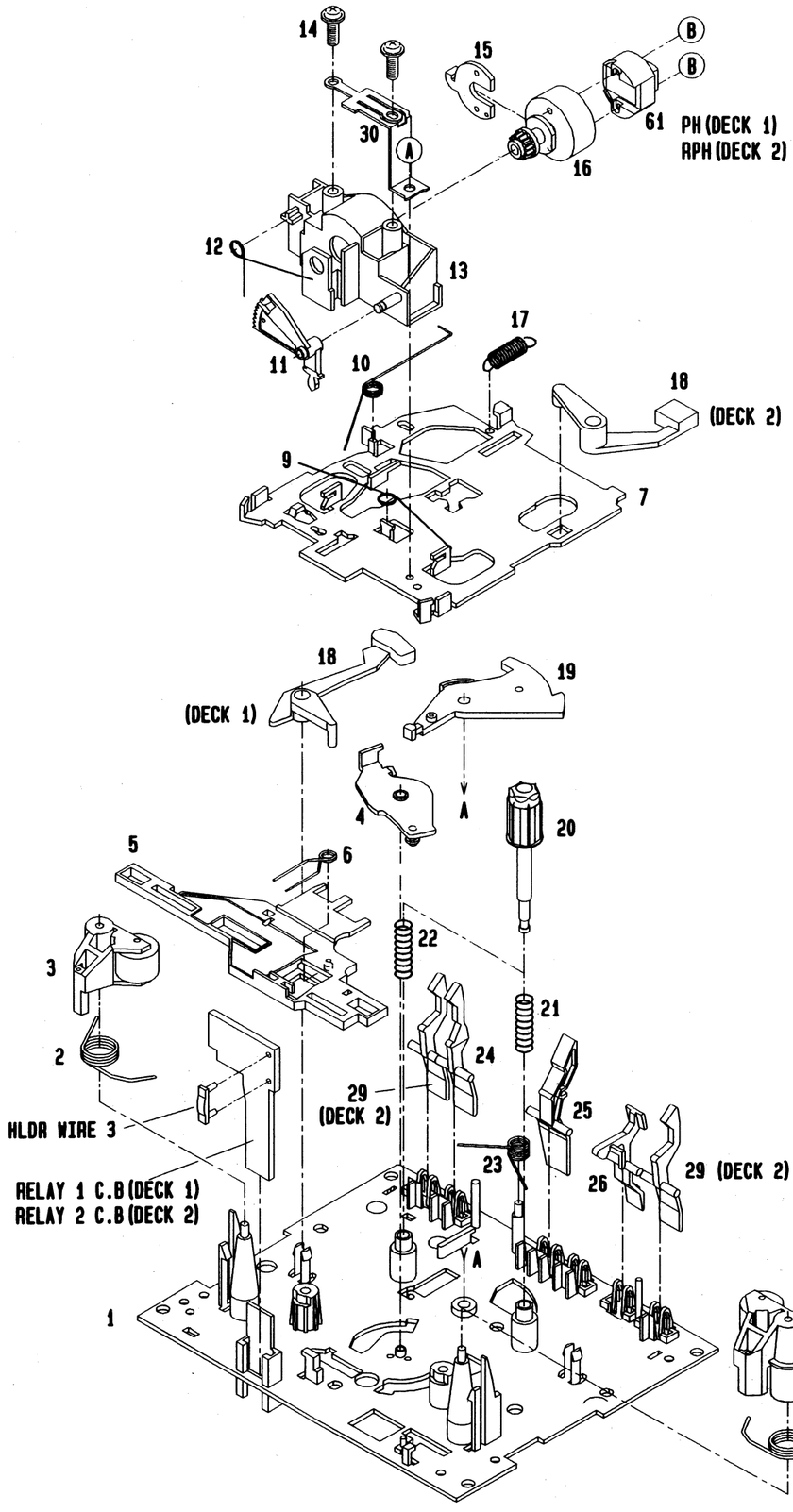
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	85-NF6-057-01S		CAB,FR 53EE<53EE,53EEZ>
1	85-NF6-002-11S		CAB,FR E<EXCEPT 53EE,53EEZ>
2	80-VT1-202-019		FELT,12.5-15.5-2
3	85-NF5-026-01S		IND,CASS
4	85-NF6-012-01S		WINDOW,CASS R
5	85-NF6-036-01S		BOX,CASS R E
6	82-NF5-219-019		SPR-T,EJECT 2 (SIN)
7	82-NF5-218-019		SRT-T,EJECT 1 (SIN)
8	85-NF6-035-01S		BOX,CASS L E
9	85-NF6-011-01S		WINDOW,CASS L
10	85-NF6-047-01S		KEY,GEQ
11	85-NF6-010-11S		PANEL,FR E
12	87-063-165-019		OIL-DMPR 150
13	82-NE6-067-01S		BADGE AIWA 30N
14	85-NF6-017-01K		KEY,PLAY
15	85-NF6-013-11S		KEY,POWER
16	85-NF6-009-01S		WINDOW,CD
17	85-NF6-206-119		COVER,FL
18	85-NF6-014-11S		KEY,OPEN
19	85-NF6-015-01S		KEY,DISK
20	83-NF5-020-01S		KNOB,MIC
21	85-NF6-023-01S		KNOB,MAIN
22	85-NF6-024-119		IND,VOL
23	85-NF6-021-01S		KEY,T-BASS
24	85-NF6-019-11S		KEY,DSP
25	85-NF6-016-01S		KEY,FUN ASSY
26	85-NF6-018-01S		KEY,KARAOKE H
27	82-NF5-212-010		GUIDE,FL
28	85-NF5-210-010		GUIDE,LED L
29	85-NF5-211-010		GUIDE,LED R
30	85-NF6-201-010		GUIDE,LED
31	85-NF6-039-01S		PANEL,TRAY E
32	85-NF5-007-019		CAB,STEEL<50V>
32	85-NF5-010-018		CAB,STEEL G<EXCEPT 50V>
33	85-NF5-031-11S		WINDOW,TOP
34	87-050-016-018		AC CORD ASSY,E<EXCEPT 50K,50V>
34	87-050-091-018		AC CORD ASSY,K 3P<50K>
34	87-050-079-019		AC-CORD ASSY,E<50V>
35	87-085-185-010		BUSHING,AC CORD E
36	85-NF6-060-01S		PANEL,REAR 53EEBNE<53EE>
36	85-NF6-061-01S		PANEL,REAR 53EZBNE<53EEZ>
36	85-NF6-055-01S		PANEL,REAR EEBNE<50EE>
36	85-NF6-032-01S		PANEL,REAR EZBNE<50EZ,50EEZ>
36	85-NF6-031-01S		PANEL,REAR KBNE<50K>
36	85-NF6-054-019		PANEL,REAR VJBNM<50V>
37	87-085-221-019		FOOT,H 13.5
38	82-NF5-227-019		HLDR,LOCK 2N
39	82-ZM3-213-010		PLATE,SHLD<50V>
39	82-ZM3-218-018		PLATE,SHLD G<EXCEPT 50V>
40	82-NF5-229-019		PLATE,LOCK
41	82-NF5-226-019		HLDR LOCK 1N
42	82-NF5-228-019		SPR-C,LOCK
A	87-067-633-019		BVT2+3-8 W/CONVEX
B	87-591-094-419		QIT + 3 - 6 GOLD
C	87-721-097-419		QT2+3-12 GLD
D	87-067-703-019		BVT2+3-10 (W/O SLOT)
E	87-067-660-019		BVT2+3-8W/O SLOT BLK
F	87-067-579-019		BVT 2+3-8 W/O SLOT
G	87-078-084-019		BVTT+3-6 W,CONVEX
H	87-067-581-019		BVT2+3-15 W/O SLOT
I	87-078-083-019		BVTT SEMS+4-8SW<EXCEPT 50V>
I	87-078-019-019		S-SCREW,IT+4-6<50V>
J	87-067-585-019		BVTT +4-6<50V>
J	87-571-092-419		VIT+3-4<EXCEPT 50V>
K	87-067-641-019		UTT2+3-8 W/O SLOT BLK
L	87-571-032-419		VIT+2-3
M	85-NF6-205-019		PVCW,3.5-8-1.2
N	87-084-077-019		NYLON RIVET DIA 3.5 - 4.5

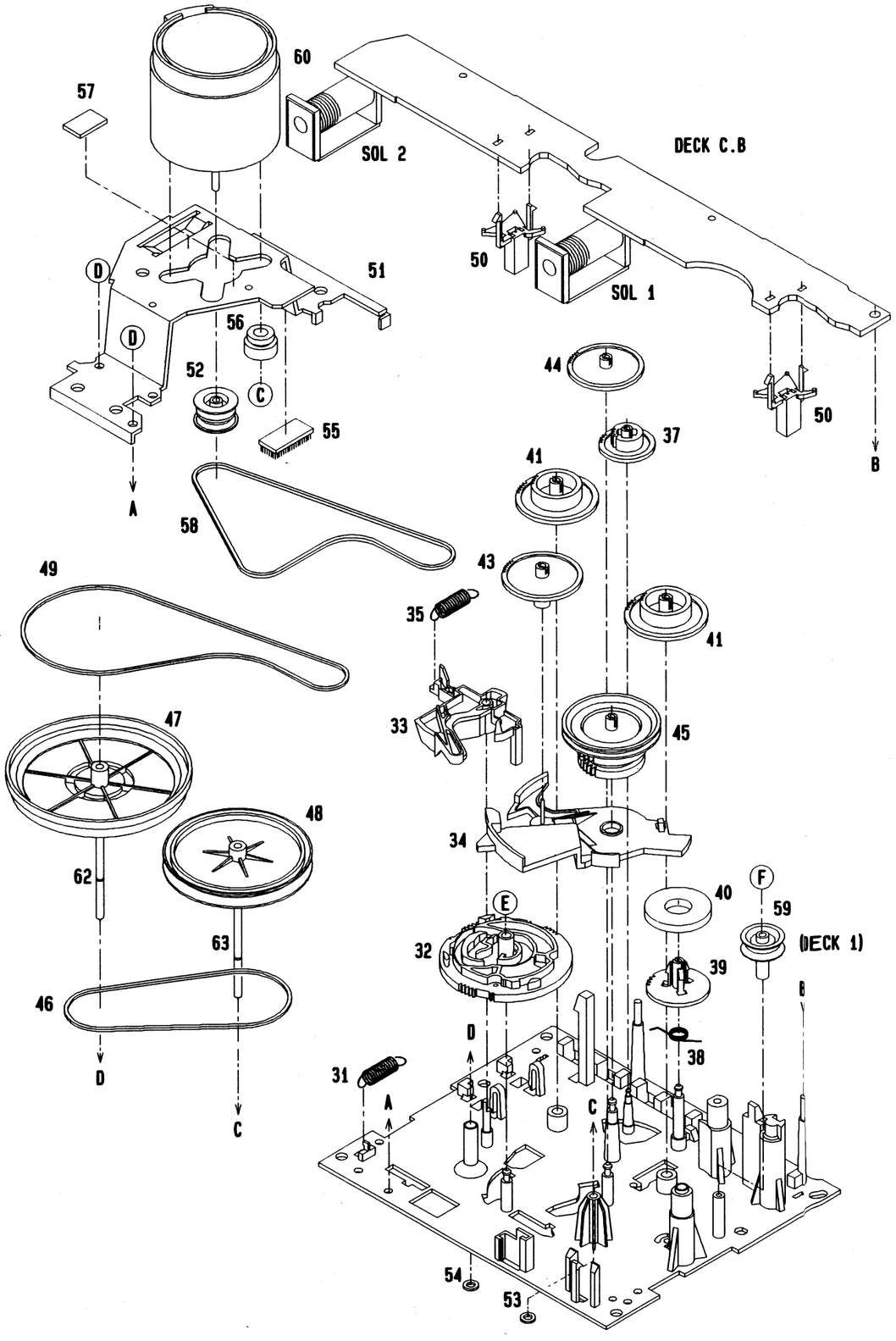
SPRING APPLICATION POSITION





TAPE MECHANISM EXPLODED VIEW 1 / 1



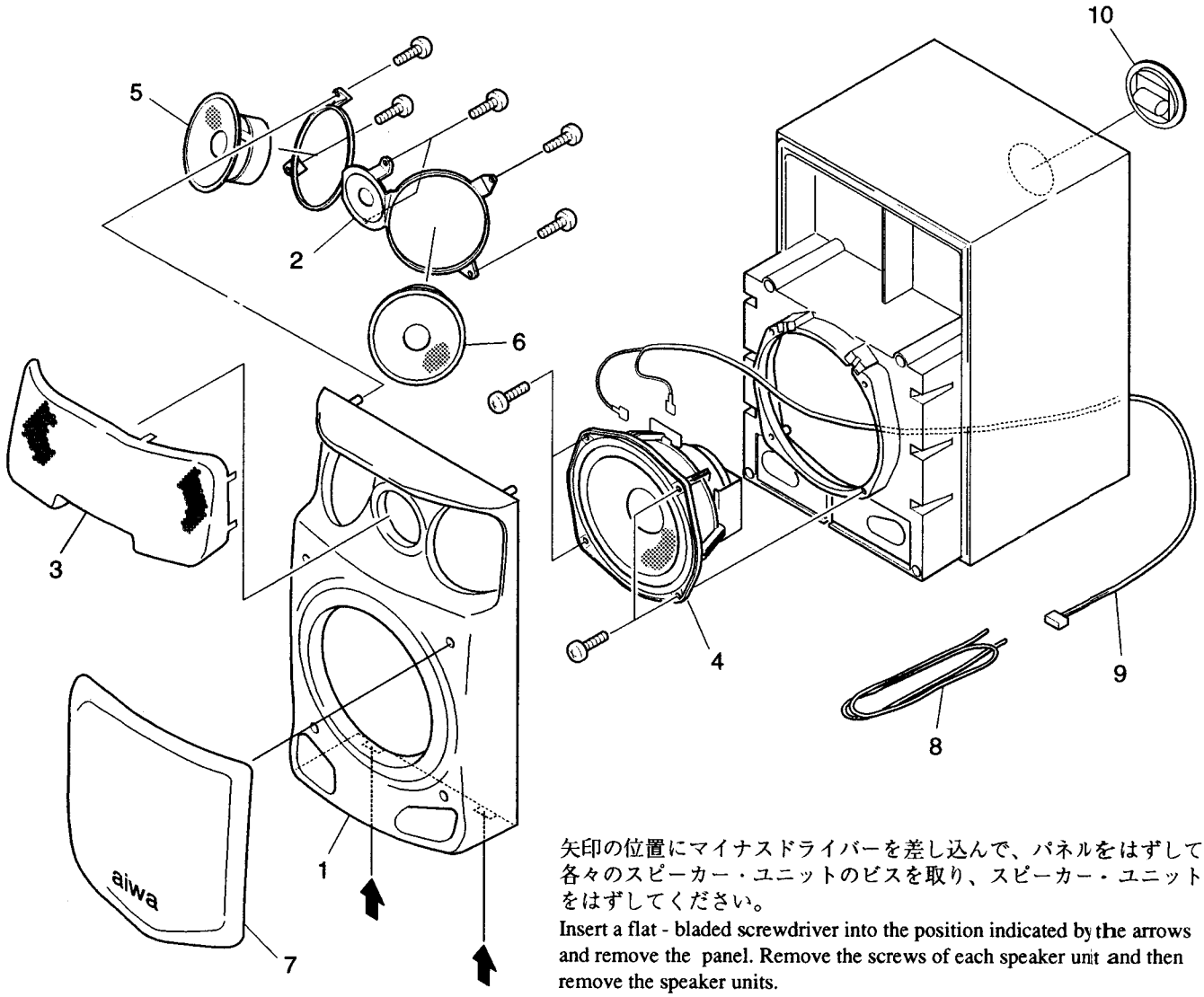


TAPE MECHANISM PARTS LIST 1 ／ 1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	82-ZM3-214-110		CHAS ASSY,P (DECK 1)
1	82-ZM1-299-010		CHAS ASSY,R (DECK 2)
2	82-ZM1-258-010		SPR-T,PINCH L
3	82-ZM1-248-110		LVR ASSY,PINCH L
4	82-ZM1-295-210		PLATE ASSY,LINK
5	82-ZM1-266-010		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-210		CHAS,HEAD
9	82-ZM1-269-010		SPR-T,BRG
10	82-ZM1-219-010		SPR-T,LINK
11	82-ZM1-210-010		GEAR,H T
12	82-ZM1-213-010		SPR-T,HEAD
13	82-ZM1-207-010		GUIDE,TAPE
14	82-ZM1-283-210		S-SCREW,AZIMUTH
15	82-ZM1-314-110		PLATE,HEAD
16	82-ZM1-208-010		HLDR,HEAD
17	82-ZM1-218-010		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-010		LVR,PLAY
20	82-ZM1-217-110		REEL TABLE
21	82-ZM1-244-110		SPR-C,BT
22	82-ZM1-285-110		SPR-C,BT L
23	82-ZM1-257-010		SPR-T,CAS
24	82-ZM1-241-110		LVR,MC
25	82-ZM1-242-010		LVR,CAS
26	82-ZM1-243-010		LVR,STOP
27	82-ZM1-253-110		LVR ASSY,PINCH R
28	82-ZM1-259-010		SPR-T,PINCH R
29	82-ZM1-240-110		LVR,REC (DECK 2)
30	82-ZM1-298-010		SPR-P,EARTH
31	82-ZM1-255-110		SPR-E,LVR DIR
32	82-ZM1-221-110		GEAR,CAM
33	82-ZM1-227-110		LVR,TRIG
34	82-ZM1-224-110		LVR,FR
35	82-ZM1-265-110		SPR-E,TRIG
37	82-ZM1-223-010		GEAR,PLAY
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-210		GEAR,IDLER
40	82-ZM1-316-010		RING MAGNET 3
41	82-ZM1-216-210		GEAR,REEL
43	82-ZM1-225-010		GEAR,FR
44	82-ZM1-226-010		GEAR,REW
45	82-ZM1-228-210		SLIP DISK ASSY
46	82-ZM1-328-010		BELT FR2
47	82-ZM1-238-610		FLY-WHL ASSY,R (DECK 2)
47	82-ZM3-210-510		FLY-WHL ASSY,R2 (DECK 1)
48	82-ZM1-235-310		FLY-WHL ASSY,L (DECK 2)
48	82-ZM3-208-410		FLY-WHL ASSY,L2 (DECK 1)
49	82-ZM3-206-010		BELT,R
50	82-ZM1-245-210		HLDR,IC
51	82-ZM3-215-010		HLDR,MC
52	82-ZM3-202-010		PULLEY,MOT 2M
53	82-ZM1-288-010		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-010		SH,1.75-3.6-0.5 SLT
55	80-ZM6-230-010		SH,BELT
56	82-ZM1-308-110		CUSH-G DIA3.7-9-3.2
57	86-575-361-010		CUSH-G,6-8-0.8
58	82-ZM3-205-010		BELT,L
59	82-ZM3-204-010		PULLEY,COUPLER (DECK 1)
60	87-045-347-010		MOT,SHU2L 70(M1)
61	87-046-355-010		HEAD,PH HADKH2529B(PH)
61	87-046-356-010		HEAD,RPH HADKH5581B(RPH)
62	82-ZM1-312-010		CAPSTAN N 2.2-41.7
63	82-ZM1-313-010		CAPSTAN N 2-41.5
A	82-ZM1-315-010		S-SCREW,GVIDE TAPE
B	80-ZM6-207-010		V+1.6-7
C	82-ZM1-309-010		S-SCRW,MOTOR
D	87-067-178-010		VTT+2.6-3
E	82-ZM1-597-019		PW,2.15-6.8-0.4 SLT
F	87-067-972-010		PW,1.05-3-0.25 SLT

SPEAKER EXPLODED VIEW 1 / 1



矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

SPEAKER PARTS LIST 1 / 1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	85-NS6-001-019		PANEL FR<50Y>
1	83-NS5-001-010		PANEL FR<550Y,550Y1>
2	85-NS5-011-019		ADAPTOR ASSY<50Y>
2	83-NS5-013-010		ADAPTOR ASSY<550Y,550Y1>
3	85-NS6-010-019		SPEAKER GRILL<50Y>
3	83-NS5-005-010		SPEAKER GRILL<550Y,550Y1>
4	85-NS6-602-019		SPEAKER WOOFER<50Y>
4	83-NSF-602-010		SPEAKER WOOFER<550Y,550Y1>
5	83-NS8-606-019		SPEAKER MID<50Y>
5	83-NS5-604-010		SPEAKER MID<550Y,550Y1>
6	83-NS8-608-019		SPEAKER<50Y>
6	83-NS5-606-010		SPEAKER<550Y,550Y1>
7	85-NS6-011-019		GRILL FRAME ASSY<50Y>
7	83-NS5-021-010		GRILL FRAME ASSY<550Y,550Y1>
8	85-NS6-611-019		SPEAKER CORD Y/B<50Y>
8	83-NS5-611-010		SPEAKER CORD Y/B<550Y,550Y1>
9	83-NS5-613-010		SPEAKER CORD ASSY
10	83-NS5-612-010		TERMINAL Y/B<550Y,550Y1>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

サービス技術ニュース	
番 号	連絡内容
G－　－	
G－　－	
G－　－	

アイワ株式会社
AIWA CO.,LTD.

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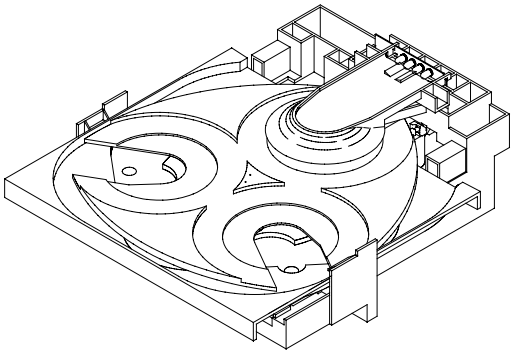
Tokyo Japan
Printed in Singapore

aiwa

aiwa SERVICE

4ZG-1



CD MECHANISM

• BASIC CD MECHANISM:3ZG-2 E1

• TYPE: English

BASIC NAME	DERIVATION NAME					
4ZG-1	V	O	S1	D	SH	

■ This Service Manual has various derivation.Derivation name is indicated by the Service Manual for each model.

SERVICE MANUAL

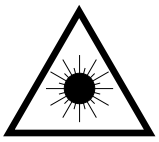
S/M Code No 09-985-249-80T

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

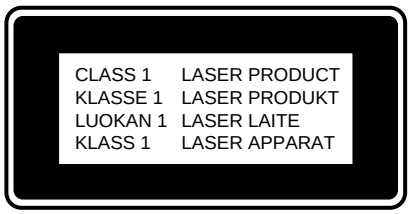
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

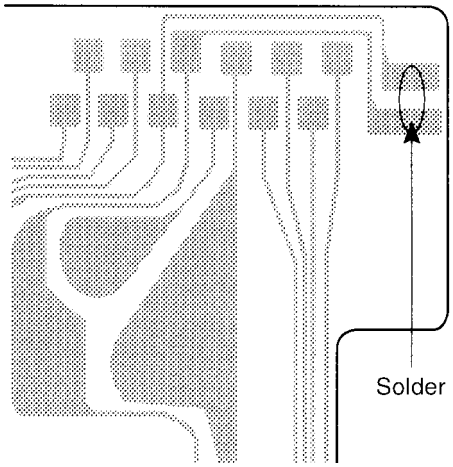


Precaution to replace Optical block (KSS-213F)

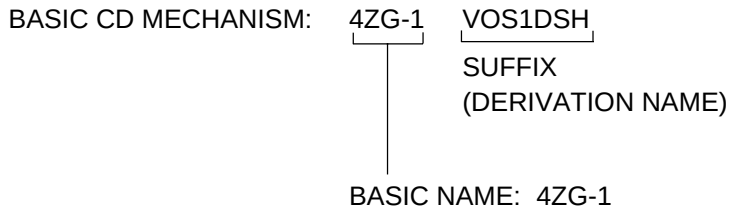
Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.



BASIC NAME	DERIVATION NAME							
4ZG-1	V	O	S1	D	SH	—	—	—

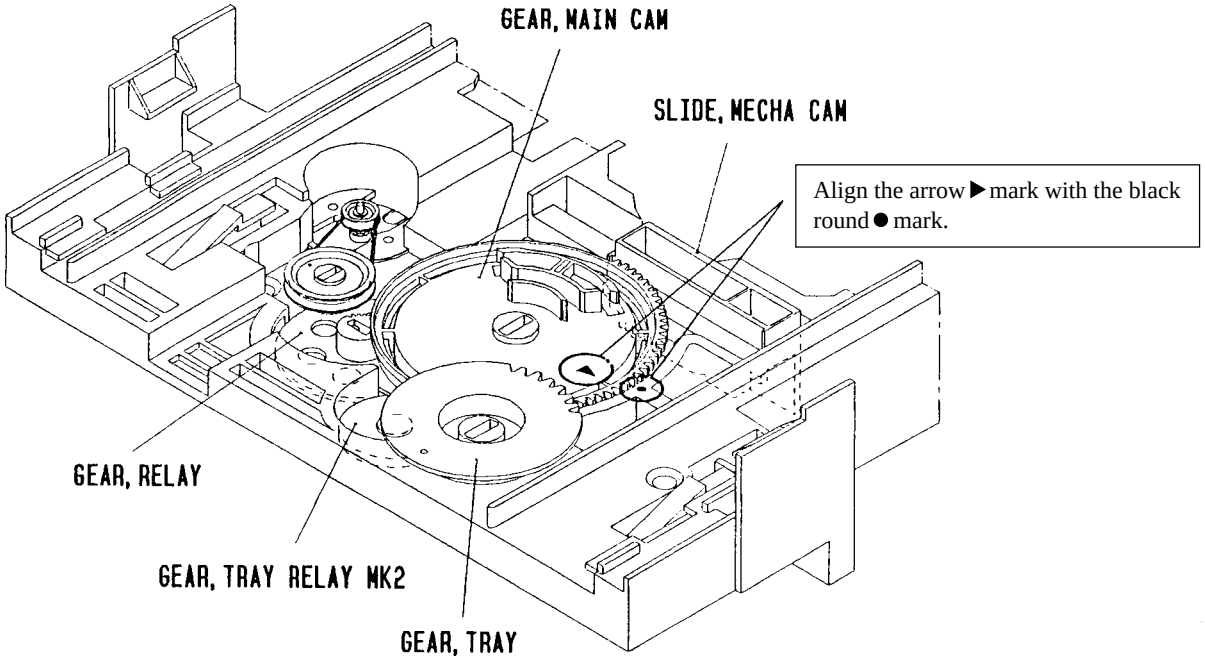
DERIVATION NAME

- V: VIDEO OUT
- O: On screen display
- S1: THE 1st SONY IC MODEL
- D: Digital output function
- SH: Pick up equipped with shutter

How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

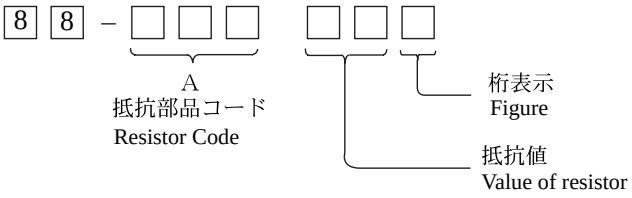
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-919-040		C-IC,BA5915FP
	87-A20-917-010		C-IC,CXD2540Q-1/2
	84-ZG1-697-010		C-IC,UPD78016FGC-549
	87-017-825-010		IC,GP1F32T
	87-017-760-080		IC,M51943BML
	87-A20-602-040		C-IC,M5291FP
	87-A20-925-040		C-IC,BA05FP
	87-A20-905-040		C-IC,BA033FP
	87-001-873-010		IC,LB1644
	87-A20-920-010		C-IC,CL680-D1
	87-A20-921-040		C-IC,SN74LVU04APW
	87-A20-656-040		C-IC,MB81V4260S-60/70PFTN
	84-ZG1-695-040		C-IC,LH5V2RN1
	87-A20-975-040		C-IC,SN74LV74APW
	87-A20-974-040		C-IC,LC74781M-9017
	87-A20-918-040		C-IC,SM5878AM
TRANSISTOR			
	87-026-463-080		TR,2SA933S (0.3W)
	87-026-237-080		CHIP-TR,DTC124XK
	89-327-125-080		CHIP TR,2SC2712GR
	87-026-231-080		CHIP-TRANSISTER,DTA124XK
	87-A30-117-010		TR,2SA1357
	89-111-625-080		TR,2SA1162 (0.15W)
	87-026-580-080		C-TR,DTA123JK
	87-026-470-080		TR,HN1C03F (0.3W)
DIODE			
	87-020-027-080		CHIP-DIODE 1SS184
	87-017-024-040		C-DIODE,DA204K
	87-A40-180-040		C-DIODE,SB07-015C
	87-A40-384-080		C-ZENER,UDZ3.3B
3CD C.B			
C101	87-010-182-080		C-CAP,S 2200P-50 B
C102	87-016-669-080		C-CAP,S 0.1-25 K B
C103	87-016-669-080		C-CAP,S 0.1-25 K B
C104	87-016-669-080		C-CAP,S 0.1-25 K B
C105	87-010-404-040		CAP,E 4.7-50 SME
C106	87-016-369-080		C-CAP,S 0.033-25 B K
C107	87-010-197-080		CAP, CHIP 0.01 DM
C108	87-010-401-040		CAP,E 1-50 SME
C109	87-010-382-040		CAP,E 22-25 SME
C110	87-010-213-080		C-CAP,S 0.015-50 B
C111	87-010-263-040		CAP,E 100-10
C112	87-010-197-080		CAP, CHIP 0.01 DM
C113	87-016-369-080		C-CAP,S 0.033-25 B K
C114	87-016-369-080		C-CAP,S 0.033-25 B K
C115	87-016-369-080		C-CAP,S 0.033-25 B K
C116	87-012-158-080		C-CAP,S 390P-50 CH
C117	87-012-154-080		C-CAP,S 150P-50 CH
C118	87-010-494-040		CAP,E 1-50 GAS
C119	87-010-152-080		C-CAP,S 8P-50 CH
C120	87-010-992-080		C-CAP,S 0.047-25 B
C121	87-010-992-080		C-CAP,S 0.047-25 B
C123	87-016-669-080		C-CAP,S 0.1-25 K B
C125	87-010-198-080		CAP, CHIP 0.022
C126	87-016-669-080		C-CAP,S 0.1-25 K B
C127	87-010-555-040		CAP,E 100-10 GAS
C130	87-010-555-040		CAP,E 100-10 GAS
C131	87-010-555-040		CAP,E 100-10 GAS
C132	87-010-178-080		CHIP CAP 1000P
C133	87-010-555-040		CAP,E 100-10 GAS
C134	87-010-196-080		CHIP CAPACITOR,0.1-25
C135	87-010-196-080		CHIP CAPACITOR,0.1-25
C136	87-010-196-080		CHIP CAPACITOR,0.1-25
C137	87-010-196-080		CHIP CAPACITOR,0.1-25
C138	87-010-182-080		C-CAP,S 2200P-50 B
C139	87-010-197-080		CAP, CHIP 0.01 DM
C140	87-010-112-040		CAP,E 100-16
C141	87-010-196-080		CHIP CAPACITOR,0.1-25
C142	87-010-196-080		CHIP CAPACITOR,0.1-25
C143	87-010-213-080		C-CAP,S 0.015-50 B
C151	87-010-263-040		CAP,E 100-10
C152	87-010-197-080		CAP, CHIP 0.01 DM
C153	87-A10-893-040		CAP,E 220-10 M PW
C154	87-010-197-080		CAP, CHIP 0.01 DM
C155	87-010-184-080		CHIP CAPACITOR 3300P(K)
C156	87-010-992-080		C-CAP,S 0.047-25 B
C157	87-010-992-080		C-CAP,S 0.047-25 B
C158	87-012-156-080		C-CAP,S 220P-50 CH
C159	87-016-526-080		C-CAP,S 0.47-16 BK
C160	87-010-314-080		C-CAP,S 22P-50V
C161	87-010-182-080		C-CAP,S 2200P-50 B
C162	87-010-178-080		CHIP CAP 1000P
C201	87-016-669-080		C-CAP,S 0.1-25 K B
C204	87-010-197-080		CAP, CHIP 0.01 DM
C205	87-010-379-040		CAP,E 22-16 M SME
C206	87-010-322-080		C-CAP,S 100P-50 CH
C207	87-010-322-080		C-CAP,S 100P-50 CH
C208	87-010-322-080		C-CAP,S 100P-50 CH
C209	87-010-322-080		C-CAP,S 100P-50 CH
C210	87-016-669-080		C-CAP,S 0.1-25 K B
C211	87-010-263-040		CAP,E 100-10
C213	87-010-190-080		S CHIP F 0.01
C214	87-010-196-080		CHIP CAPACITOR,0.1-25
C301	87-016-251-040		CAP,E 220-16 SMG
C302	87-012-140-080		CAP 470P
C303	87-010-178-080		CHIP CAP 1000P
C304	87-010-384-040		CAP,E 100-25 SME
C305	87-010-982-040		CAP,E 33-25 GAS
C306	87-010-112-040		CAP,E 100-16
C307	87-010-196-080		CHIP CAPACITOR,0.1-25
C308	87-010-263-040		CAP,E 100-10
C309	87-010-196-080		CHIP CAPACITOR,0.1-25
C310	87-010-263-040		CAP,E 100-10
C311	87-010-196-080		CHIP CAPACITOR,0.1-25
C312	87-010-178-080		CHIP CAP 1000P
C320	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-016-044-040		CAP,E 100-16 GAS
C402	87-010-190-080		S CHIP F 0.01
C403	87-010-190-080		S CHIP F 0.01
C501	87-010-197-080		CAP, CHIP 0.01 DM
C502	87-010-197-080		CAP, CHIP 0.01 DM
C503	87-010-197-080		CAP, CHIP 0.01 DM
C504	87-010-154-080		CAP CHIP 10P
C505	87-010-154-080		CAP CHIP 10P
C506	87-010-197-080		CAP, CHIP 0.01 DM
C508	87-010-263-040		CAP,E 100-10
C509	87-016-669-080		C-CAP,S 0.1-25 K B
C510	87-010-263-040		CAP,E 100-10
C511	87-016-669-080		C-CAP,S 0.1-25 K B
C512	87-010-197-080		CAP, CHIP 0.01 DM
C513	87-010-197-080		CAP, CHIP 0.01 DM
C514	87-010-197-080		CAP, CHIP 0.01 DM
C518	87-010-322-080		C-CAP,S 100P-50 CH
C519	87-012-145-080		CAP, CHIP S 270P CH
C520	87-012-157-080		C-CAP,S 330P-50 CH
C521	87-012-154-080		C-CAP,S 150P-50 CH
C522	87-010-371-080		CAP, ELECT 470-6.3V
C523	87-010-197-080		CAP, CHIP 0.01 DM
C524	87-010-197-080		CAP, CHIP 0.01 DM
C525	87-010-197-080		CAP, CHIP 0.01 DM
C526	87-010-197-080		CAP, CHIP 0.01 DM

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C527	87-010-197-080		CAP, CHIP 0.01 DM
C528	87-010-197-080		CAP, CHIP 0.01 DM
C529	87-010-197-080		CAP, CHIP 0.01 DM
C530	87-010-197-080		CAP, CHIP 0.01 DM
C531	87-010-197-080		CAP, CHIP 0.01 DM
C532	87-010-374-040		CAP,E 47-10
C533	87-010-197-080		CAP, CHIP 0.01 DM
C534	87-010-555-040		CAP,E 100-10 GAS
C535	87-010-197-080		CAP, CHIP 0.01 DM
C536	87-010-078-040		CAP,E 47-6.3 5L
C537	87-010-197-080		CAP, CHIP 0.01 DM
C538	87-010-196-080		CHIP CAPACITOR,0.1-25
C539	87-016-669-080		C-CAP,S 0.1-25 K B
C540	87-010-078-040		CAP,E 47-6.3 5L
C541	87-010-197-080		CAP, CHIP 0.01 DM
C542	87-010-318-080		C-CAP,S 47P-50 CH
C544	87-010-197-080		CAP, CHIP 0.01 DM
C546	87-010-197-080		CAP, CHIP 0.01 DM
C549	87-010-494-040		CAP,E 1-50 GAS
C550	87-010-196-080		CHIP CAPACITOR,0.1-25
C551	87-012-153-080		C-CAP,S 120P-50 CH
C552	87-016-526-080		C-CAP,S 0.47-16 BK
C554	87-010-197-080		CAP, CHIP 0.01 DM
C556	87-010-378-040		CAP,E 10-16
C557	87-010-316-080		C-CAP,S 33P-50 CH
C558	87-010-315-080		C-CAP,S 27P-50 CH
C560	87-010-197-080		CAP, CHIP 0.01 DM
C601	87-010-197-080		CAP, CHIP 0.01 DM
C602	87-010-197-080		CAP, CHIP 0.01 DM
C603	87-010-112-040		CAP,E 100-16
C604	87-010-196-080		CHIP CAPACITOR,0.1-25
C605	87-010-197-080		CAP, CHIP 0.01 DM
C606	87-010-197-080		CAP, CHIP 0.01 DM
C607	87-010-313-080		CAP, CHIP 18P
C608	87-010-313-080		CAP, CHIP 18P
C609	87-010-178-080		CHIP CAP 1000P
C610	87-010-178-080		CHIP CAP 1000P
C611	87-010-178-080		CHIP CAP 1000P
C612	87-010-178-080		CHIP CAP 1000P
C613	87-010-403-040		CAP,E 3.3-50 SME
C614	87-010-403-040		CAP,E 3.3-50 SME
C615	87-010-318-080		C-CAP,S 47P-50 CH
C616	87-010-318-080		C-CAP,S 47P-50 CH
CN101	87-A60-424-010		CONN,16P V TOC-B
CN102	87-099-199-010		CONN,6P 6216 H
CN401	87-099-212-010		CONN,5P 6216 V
CN403	87-099-030-010		CONN,13P 6216H
J501	87-009-502-010		JACK,PIN 1P Y EARTH
L101	87-005-196-080		COIL,10UH
L301	87-A50-095-010		COIL,68UH RCR875D
L302	87-005-426-080		COIL,3.3UH K FLR50
L502	87-005-204-080		COIL,47UH
L503	87-005-189-080		COIL 2.7UH
L504	87-005-187-080		COIL,1.8UH
L505	87-005-204-080		COIL,47UH
L506	87-005-204-080		COIL,47UH
L507	87-005-204-080		COIL,47UH
L508	87-005-817-080		C-COIL, 33UH J FLC32
M401	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
R130	87-022-364-080		C-RES,S 82K-1/10W F
R131	87-022-364-080		C-RES,S 82K-1/10W F
R132	87-022-364-080		C-RES,S 82K-1/10W F
R133	87-022-364-080		C-RES,S 82K-1/10W F
R134	87-022-364-080		C-RES,S 82K-1/10W F
R135	87-022-364-080		C-RES,S 82K-1/10W F
R507	87-A00-408-080		C-RES,S 2K-1/10W D
S201	87-A90-162-010		SW,SL 1-1-3 SSSU
S401	87-036-109-010		PUSH SWITCH
S402	87-036-109-010		PUSH SWITCH
W1	84-ZG1-673-010		F-CABLE,5P 1.25 210MM BLACK N
W2	85-NFT-611-110		FF-CABLE 16P-1.0
W3	84-ZG1-630-010		CABLE FFC 6P-1.25
X201	87-A70-124-080		VIB,CER 8.0MHZ
X501	87-A70-125-080		VIB,XTAL 27MHZ 50PPM
X601	87-030-270-080		VIB,XTAL 16.9344MHZ
LED C.B			
LED401	87-070-200-080		LED,SLP636C-81-S-T1
LED402	87-017-350-080		LED,SEL1550CM
LED403	87-017-350-080		LED,SEL1550CM
LED404	87-070-200-080		LED,SLP636C-81-S-T1
T-T C.B			
C401	87-018-214-080		CAP TC U 0.1-50F
CON401	86-NFZ-675-010		CONN,5P H 6216-11H
PS401	87-026-573-010		IC,GP1S53V
DRIVE C.B			
CN3	87-009-349-010		CONN,6P H WHT PH
M20	87-045-358-010		MOT,RF-310TA 43
M21	87-045-356-010		MOT,RF-310TA 30
SW1	87-A90-042-010		SW,LEAF MSW-17310MVPO
CD MOTOR C.B			
CN4	87-099-210-010		CONN,5P H BLK 6216
M1	87-045-305-010		MOT,RF-500TB
SW1	87-035-110-010		SW,MICRO SPPB62
SW2	87-035-110-010		SW,MICRO SPPB62

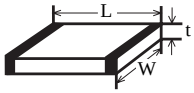
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

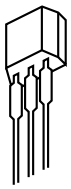
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



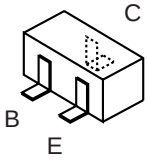
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード　: A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

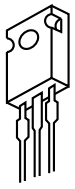
TRANSISTOR ILLUSTRATION



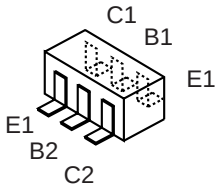
2SA933S



2SA1162
2SC2712
DTA123JK
DTA124XK
DTC124XK

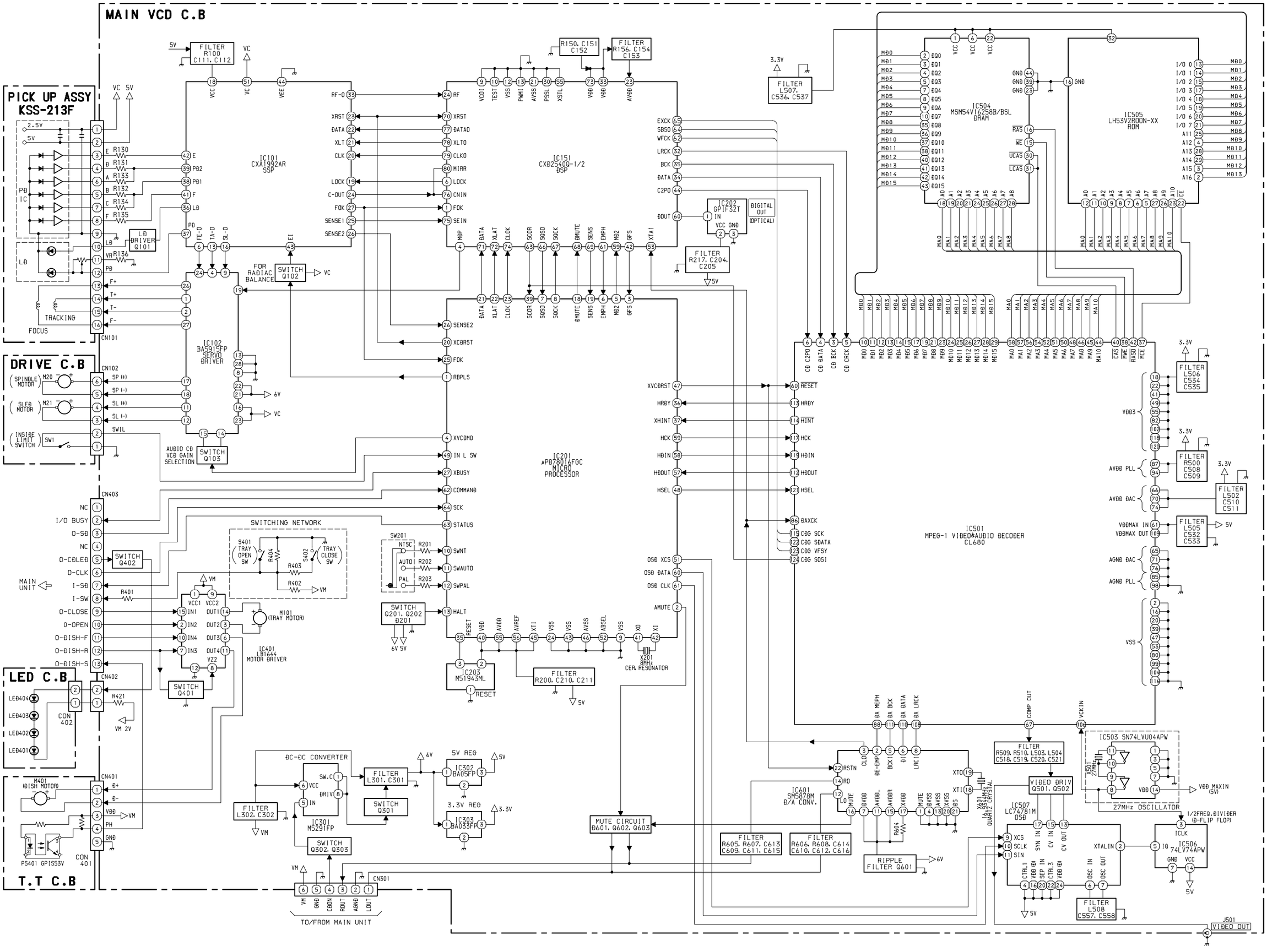


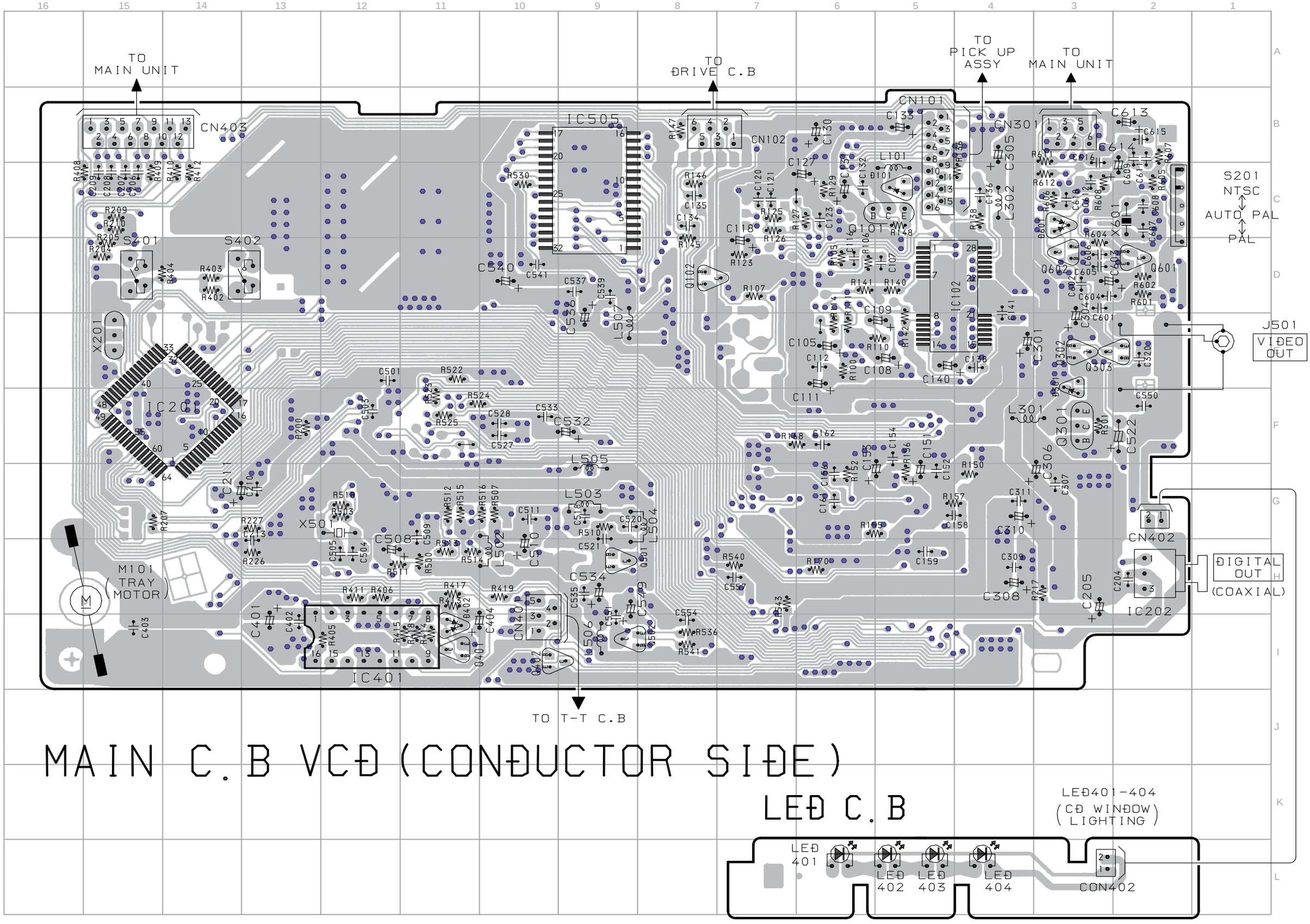
2SA1357

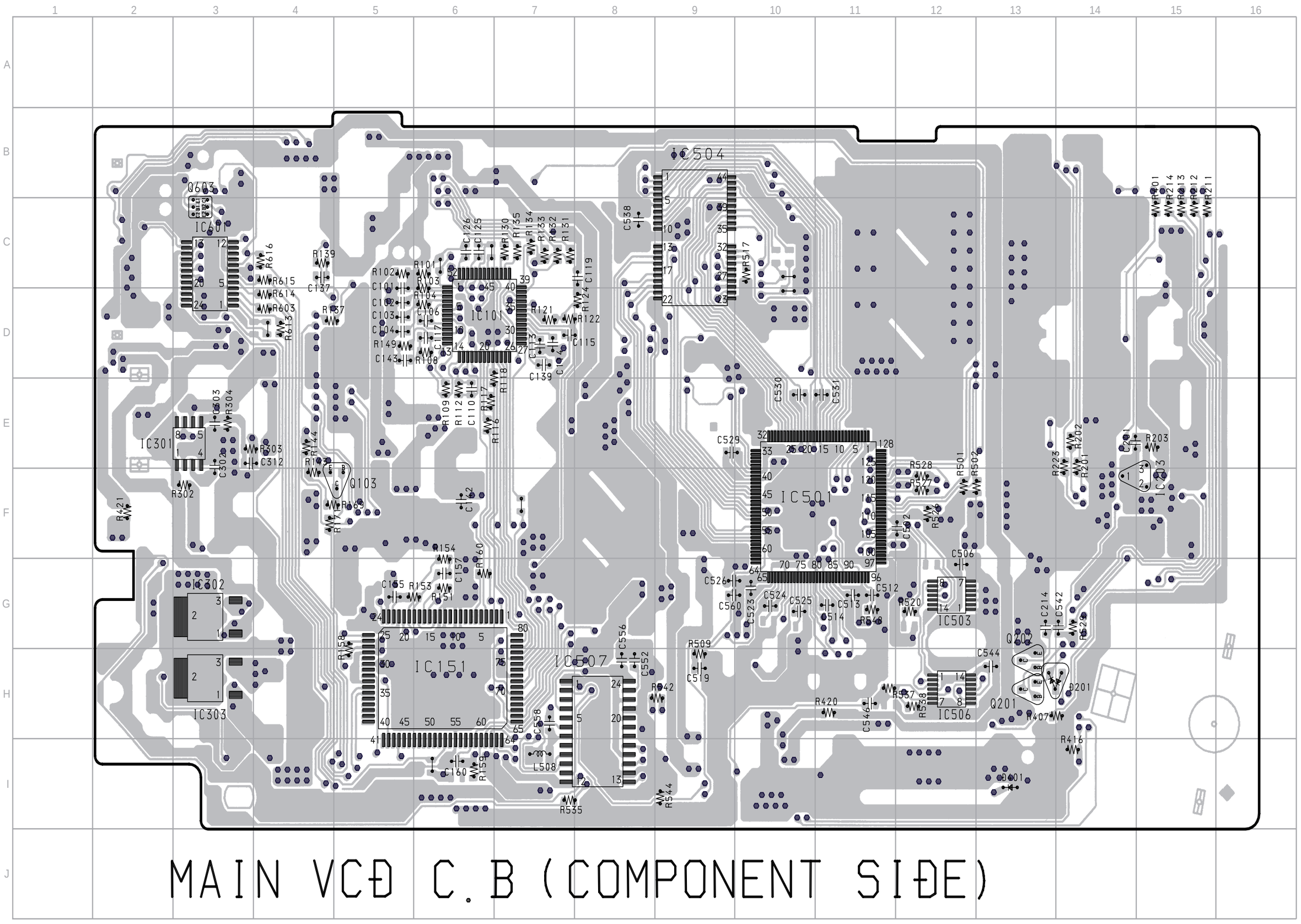


HN1C03F

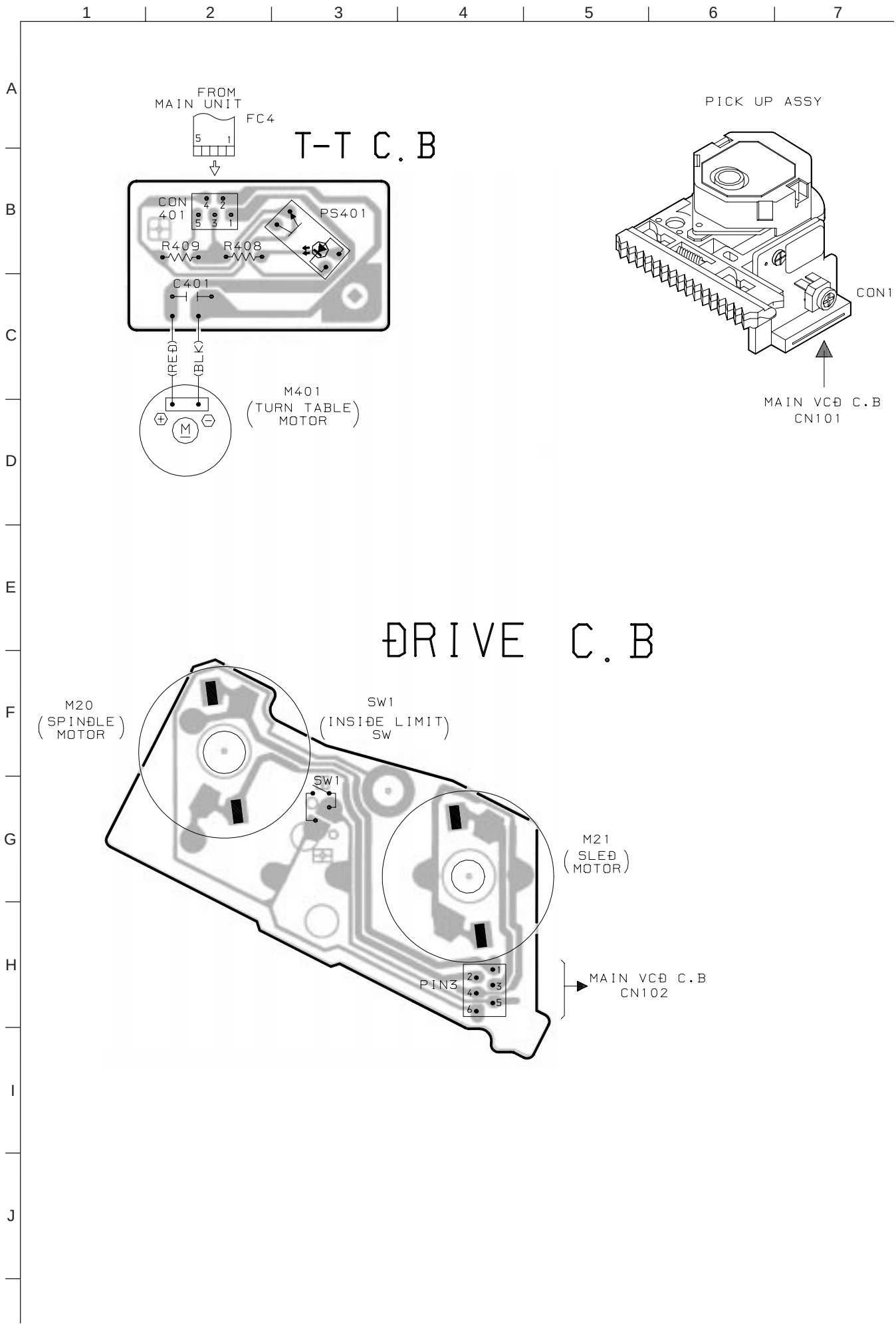
BLOCK DIAGRAM



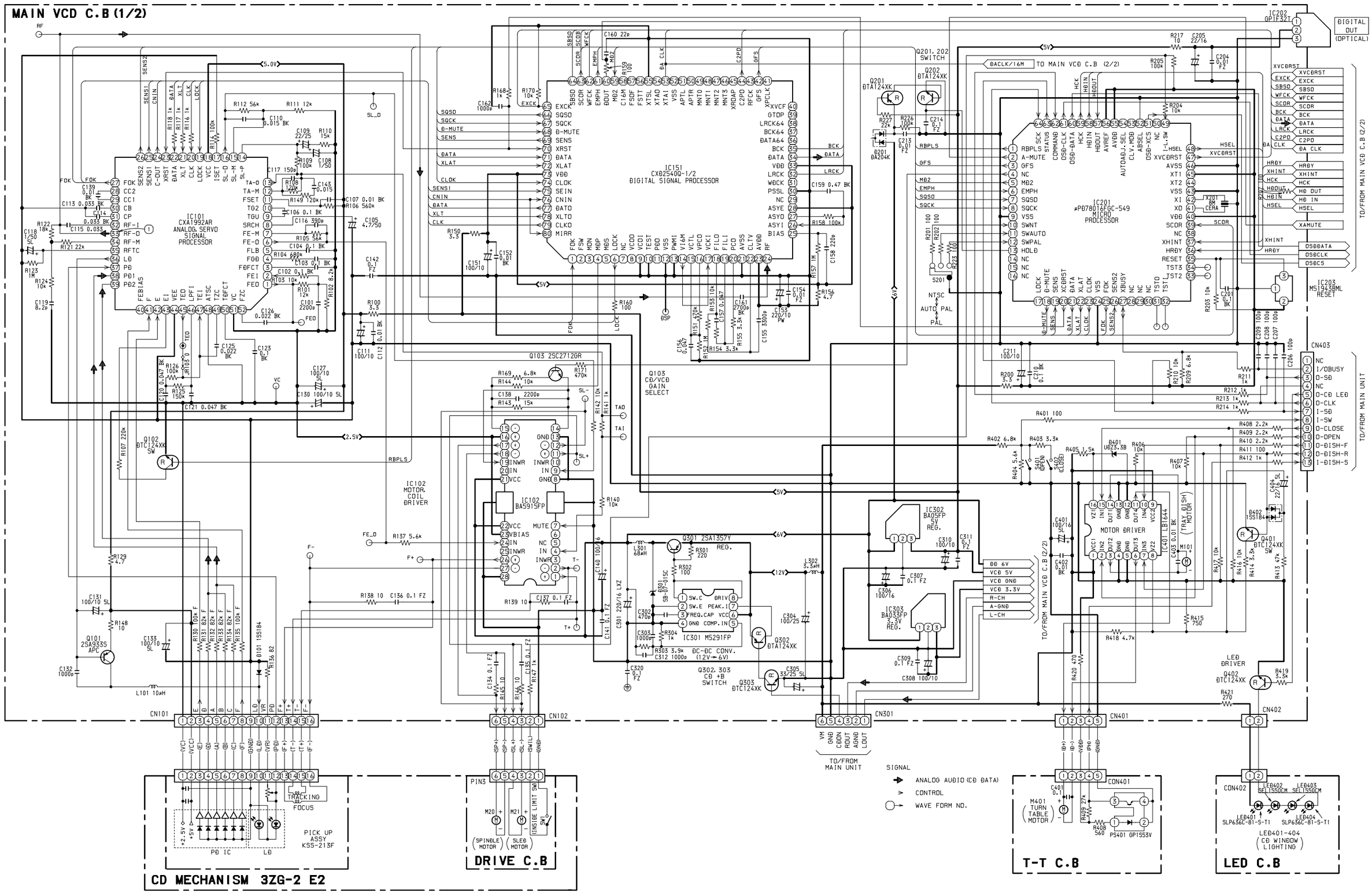

TO MAIN UNIT
TO ÐRIVE C.B
TO PICK UP ASSY
TO MAIN UNIT
CN403
CN102
CN101
CN301
CN402
IC505
IC201
IC401
IC202
IC102
S401
S402
S201 NTSC AUTO PAL PAL
J501 VIÐEO OUT
ÐIGITAL OUT (COAXIAL)
M101 (TRAY MOTOR)
TO T-T C.B
MAIN C.B VCÐ (CONÐUCTOR SIÐE)
LEÐ C.B
LEÐ401-404 (CÐ WINÐOW LIGHTING)
LEÐ 401
LEÐ 402
LEÐ 403
LEÐ 404
CON402

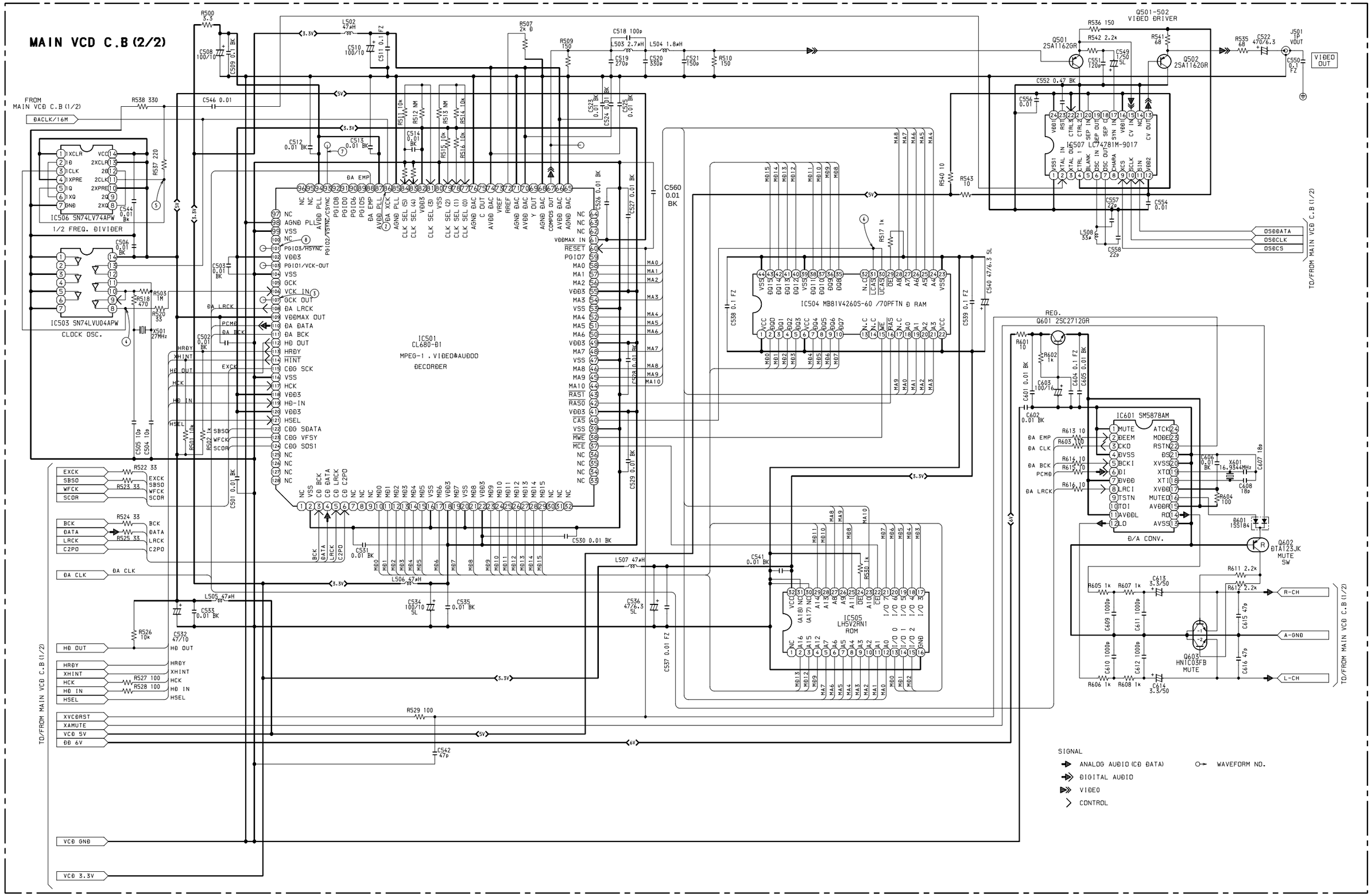


MAIN VCÐ C.B (COMPONENT SIÐE)


FROM
MAIN UNIT
FC4
5
1
T-T C.B
CON
401
4
2
5
3
1
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE
MOTOR)
M
PICK UP ASSY
CON1
MAIN VCD C.B
CN101
DRIVE C.B
M20
(SPINDLE
MOTOR)
SW1
(INSIDE LIMIT
SW)
SW1
M21
(SLED
MOTOR)
PIN3
1
2
3
4
5
6
MAIN VCD C.B
CN102

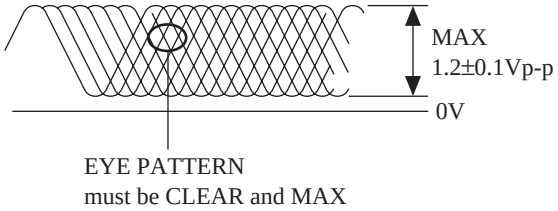
SCHEMATIC DIAGRAM-1




MAIN VCD C.B (2/2)
FROM MAIN VCD C.B (1/2)
ÐACLK/16M
IC506 SN74LV74APW
1/2 FREQ. ÐIVIÐER
IC503 SN74LVU04APW
CLOCK OSC.
X501 27MHz
IC501 CL680-Ð1
MPEG-1 . VIÐEO&AUÐIO ÐECORÐER
IC504 MB81V4260S-60 /70PFTN Ð RAM
IC505 LH5V2RN1 ROM
IC507 LC74781M-9017
Q501-502 VIÐEO ÐRIVER
Q501 2SA1162GR
Q502 2SA1162GR
REG. Q601 2SC2712GR
IC601 SM5878AM
Ð/A CONV.
Q602 ÐTA123JK MUTE SW
Q603 HN1C03FB MUTE
D601 1SS184
VIÐEO OUT
TO/FROM MAIN VCÐ C.B (1/2)
TO/FROM MAIN VCÐ C.B (1/2)
OSÐÐATA
OSÐCLK
OSÐCS
R-CH
A-GNÐ
L-CH
SIGNAL
ANALOG AUÐIO (CÐ ÐATA)
ÐIGITAL AUÐIO
VIÐEO
CONTROL
WAVEFORM NO.

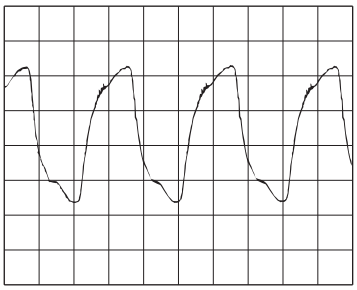
WAVE FORM

① IC101 Pin ㉝ (RF-O)
VOLT/DIV: 200mV
TIME/DIV: 0.5µS

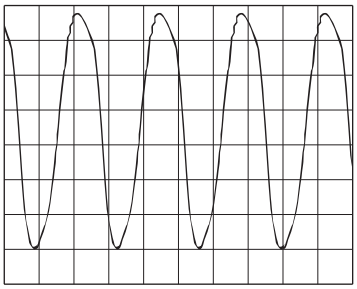


EYE PATTERN
must be CLEAR and MAX

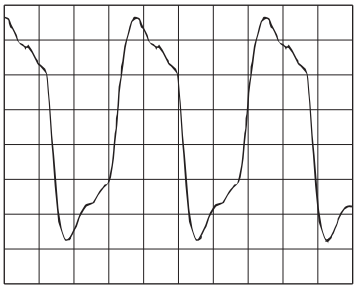
② IC501 Pin ㊽ DA XCK
16.93MHz
VOLT/DIV: 1V
TIME/DIV: 20nS



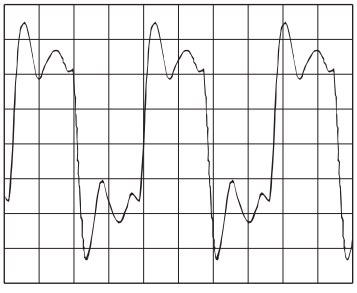
③ IC501 Pin ⑩⑦ GCK OUT
42.3MHz
VOLT/DIV: 1V
TIME/DIV: 10nS



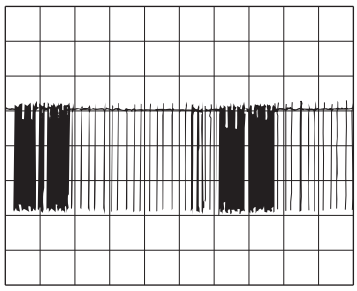
④ IC503 Pin ⑧ 33 VCK
27MHz±1.35kHz
VOLT/DIV: 1V
TIME/DIV: 10nS



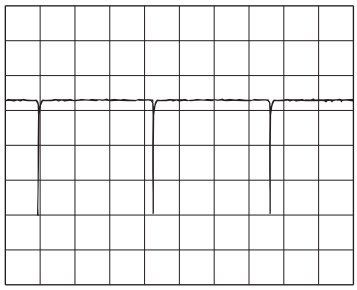
⑤ IC506 Pin ⑪ OSD CLK
13.5MHz±675Hz
VOLT/DIV: 1V
TIME/DIV: 20nS



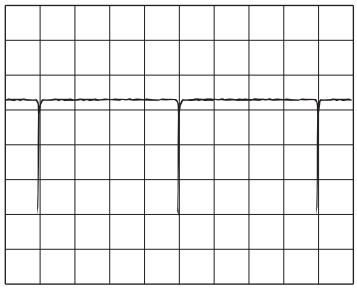
⑥ IC504 Pin ㉚ $\overline{\text{UCAS}}$
(Pin ㉛ $\overline{\text{LCAS}}$)
VOLT/DIV: 1V
TIME/DIV: 2µS



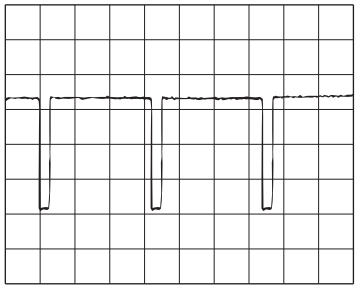
⑦ IC501 Pin ㉝ $\overline{\text{VSync}}$
NTSC
VOLT/DIV: 1V
TIME/DIV: 5mS



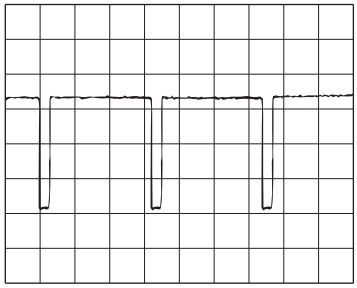
⑧ IC501 Pin ㉝ $\overline{\text{VSync}}$
PAL
VOLT/DIV: 1V
TIME/DIV: 5mS



⑧ IC501 Pin ⑩① $\overline{\text{HSync}}$
PAL
VOLT/DIV: 1V
TIME/DIV: 20µS



IC501 Pin ⑩① $\overline{\text{HSync}}$
NTSC
VOLT/DIV: 1V
TIME/DIV: 20µS



IC DESCRIPTION

IC, CXA1992AR

Pin No.	Pin Name	I/O	Description
1	FEO	O	Output terminal for focus error amplifier. Internally connected to window comparator input for bias condition.
2	FEI	I	Input terminal for focus error.
3	FDFCT	I	Capacitor connection terminal for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FE_O	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TA_M	I	Tracking amplifier inverted input pin.
13	TA_O	O	Tracking drive output.
14	SL_P	I	Sled amplifier non-inverted input pin.
15	SL_M	I	Sled amplifier inverted input pin.
16	SL_O	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input with external resistance connected.
18	Vcc	I	Power supply.
19	LOCK	I	“L” setting starts sled disorder-prevention circuit. (Not pull-up resistance)
20	CLK	I	Clock input for serial data transfer from CPU. (No pull-up resistance)
21	XLT	I	Latch input from CPU. (No pull-up resistance)
22	DATA	I	Serial data input from CPU. (No pull-up resistance)
23	XRST	I	Reset system at “L” setting. (No pull-up resistance)
24	C_OUT	O	Signal output for track number counting.
25	SENS1	O	FZC, DFCT1, TZC, BALH, TGH, FOH, or ATSC is output depending on the command from CPU.
26	SENS2	O	DFCT2, MIRR, BALL, TGL or FOL is output depending on the command from CPU.
27	FOK	O	Output terminal for focus OK comparator.
28	CC2	I	Input pin where the DEFECT bottom hold output is capacitance coupled.
29	CC1	O	DEFECT bottom-hold output terminal. Internally connected to interruption comparator input.
30	CB	I	Connection terminal for DEFECT bottom-hold capacitor.
31	CP	I	Connection terminal for MIRR hold-capacitor. Anti-reverse input terminal for MIRR comparator.

Pin No.	Pin Name	I/O	Description
32	RF_I	I	Input terminal by capacity combination of RF summing amplifier.
33	RF_O	O	Output terminal of RF summing amplifier. Checkpoint of Eye pattern.
34	RF_M	I	Anti-reverse input terminal for RF summing amplifier. The gain of RF amplifier is decided by the connection resistance between RF_M and RFO terminals.
35	RFTC	I	This is a pin where the selection time constant is externally connected to control the RF level.
36	LD	O	APC amplifier output terminal.
37	PD	I	APC amplifier input terminal.
38, 39	PD1, PD2	I	RFI-V amplifier inverted input pin. These pins are connected to the A+C and B+C pins of the optical pickup, receiving by currents input.
40	FEBIAS	I/O	Bias adjustment pin of the focus error amplifier.
41, 42	F, E	I	F and EIV amplifier inverted input pins. These pins are connected to the F and E of the optical pickup, receiving by current input.
43	EI	—	Gain adjustment pin of the I-V amplifier E. (When not in use of BAL automatic adjustment)
44	VEE	—	GND connection pin.
45	TEO	O	Output terminal for tacking-error amplifier. Output E-F signal.
46	LPFI	I	BAL adjustment comparator input pin. (Input through LPF from TEO)
47	TEI	I	Input terminal for tracking error.
48	ATSC	I	Window-comparator input terminal for detecting ATSC.
49	TZC	I	Input terminal for tracking-zero cross comparator.
50	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
51	VC	O	Output terminal for DC voltage reduced to half of VCC+VEE.
52	FZC	I	Input terminal for focus-zero cross comparator.

IC, CXD2540Q

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input. Used for SENS output and the servo auto sequencer.
2	FSW	O	Spindle motor output filter switching output.
3	MON	O	Spindle motor on/off control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	
6	LOCK	O	High, when sampled value of GFS at 460Hz is high. Low, when sampled value of GFS at 460Hz is low by 8 times successively.
7	NC		
8	VCOO	O	Analog EFM PLL oscillation circuit output.
9	VCOI	I	Analog EFM PLL oscillation circuit input. fLOCK=8.6436MHz.
10	TEST	I	TEST pin.
11	PDO	O	Analog EFM PLL charge pump output.
12	VSS		GND.
13	PWMI	I	Spindle motor external control input.
14	V16M	O	VCO2 oscillation output for the wide-band EFM PLL.
15	VCTL	I	VCO2 control voltage input for the wide-band EFM PLL.
16	VPCO	O	Wide-band EFM PLL charge pump output.
17	VCKI	I	VCO2 oscillation input for the wide-band EFM PLL.
18	FILO	O	Multiplier PLL (slave=digital PLL) filter output.
19	FILI	I	Multiplier PLL filter input.
20	PCO	O	Multiplier PLL charge pump output.
21	AVSS		Analog GND.
22	CLTV	I	Multiplier VCO1 control voltage input.
23	AVDD		Analog power supply (5V).
24	RF	I	EFM signal input.
25	BIAS	I	Constant current input of the asymmetry circuit.
26	ASYI	I	Asymmetry comparator voltage input.
27	ASYO	O	EFM full-swing output.
28	ASYE	I	Low: asymmetry circuit off; high: asymmetry circuit on.
29	NC		
30	PSSL	I	Audio data output mode switching input. Low: serial output; high: parallel output.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f=2Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f=Fs.
33	VDD		Power supply (5V).
34	DA16	O	DA16 (MSB) output when PSSL=1. 48-bit slot serial data (two's complement, MSB first) when PSSL=0.
35	DA15	O	DA15 output when PSSL=1. 48-bit slot bit clock when PSSL=0.
36	DA14	O	DA14 output when PSSL=1. 64-bit slot serial data (two's complement, LSB first) when PSSL=0.
37	DA13	O	DA13 output when PSSL=1. 64-bit slot bit clock when PSSL=0.
38	DA12	O	DA12 output when PSSL=1. 64-bit slot LR clock when PSSL=0.

Pin No.	Pin Name	I/O	Description
39	DA11	O	DA11 output when PSSL=1. GTOP output when PSSL=0.
40	DA10	O	DA10 output when PSSL=1. XUGF output when PSSL=0.
41	DA09	O	DA09 output when PSSL=1. XPLCK output when PSSL=0.
42	DA08	O	DA08 output when PSSL=1. GFS output when PSSL=0.
43	DA07	O	DA07 output when PSSL=1. RFCK output when PSSL=0.
44	DA06	O	DA06 output when PSSL=1. C2PO output when PSSL=0.
45	DA05	O	DA05 output when PSSL=1. XRAOF output when PSSL=0.
46	DA04	O	DA04 output when PSSL=1. MNT3 output when PSSL=0.
47	DA03	O	DA03 output when PSSL=1. MNT2 output when PSSL=0.
48	DA02	O	DA02 output when PSSL=1. MNT1 output when PSSL=0.
49	DA01	O	DA01 output when PSSL=1. MNT0 output when PSSL=0.
50	APTR	O	Aperture compensation control output. This pin outputs a high signal when the right channel is used.
51	APTL	O	Aperture compensation control output. This pin outputs a high signal when the left channel is used.
52	VSS		GND.
53	XTAI	I	Crystal oscillation circuit input.
54	XTAO	O	Crystal oscillation circuit output.
55	XTSL	I	Crystal selector input.
56	FSTT	O	2/3 frequency divider output for Pins 53 and 54.
57	FSOF	O	1/4 frequency divider output for Pins 53 and 54.
58	C16M	O	16.9344MHz output. (V16M output in CLV-W and CAV-W modes)
59	MD2	I	Digital-out on/off control. High: on; low: off
60	DOUT	O	Digital-out output.
61	EMPH	O	Outputs a high signal when the playback disc has emphasis, and a low signal when there is no emphasis.
62	WFCK	I	WFCK (write frame clock) output.
63	SCOR	O	Outputs a high signal when either subcode sync S0 or S1 is detected.
64	SBSO	O	Sub P to W serial output.
65	EXCK	I	SBSO readout clock input.
66	SQSO	O	Sub Q 80-bit and PCM peak, level metter and internal status outputs.
67	SQCK	I	SQSO readout clock input.
68	MUTE	I	High: mute; low: release
69	SENS	—	SENS output to CPU.
70	XRST	I	System reset. Reset when low.
71	DATA	O	Serial data input from CPU.
72	XLAT	O	Latch input from CPU. Serial data is latched at the falling edge.
73	VDD		Power supply (5V).
74	CLOK	O	Serial data transfer clock input from CPU.
75	SEIN	I	SENS input from SSP.
76	CNIN	I	Track jump count signal input.

Pin No.	Pin Name	I/O	Description
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latched at the falling edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used when the number of tracks is 128 or more for the 2N-track jump and M track move of the auto sequencer.

Notes)

- The 64-bit slot is an LSB first, two's complement output, and the 48-bit slot is an MSB first, two's complement output.
- GTOP is used to monitor the frame sync protection status. (High: sync protection window open.)
- XUGF is the negative pulse for the frame sync obtained from the EFM signal. It is the signal before sync protection.
- XPLCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge and the EFM signal transition point coincide.
- GFS goes high when the frame sync and the insertion protection timing match.
- RFCK is derived from the crystal accuracy, and has a cycle of 136μ.
- C2PO represents the data error status.
- XRAOF is generated when the 32K RAM exceeds the ±28F jitter margin.

IC, CL680

Pin No.	Pin Name	I/O	Description
1	NC	—	No connection.
2	VSS	—	GND.
3	CD BCK	I	Bit clock input from CD DSP.
4	CD DATA	I	Data input from CD DSP.
5	CD LRCK	I	LRCK input from CD DSP.
6	CD C2PO	I	C2 pointer input from CD DSP.
7-9	NC	—	No connection.
10-15	MD0-MD5	I/O	DRAM/ROM interface. (DATA)
16	VSS	—	Ground.
17	MD6	I/O	DRAM/ROM interface. (DATA)
18	VDD3	—	Power supply 3.3V.
19	MD7	I/O	DRAM/ROM interface. (DATA)
20	VSS	—	Ground.
21	MD8	I/O	DRAM/ROM interface. (DATA)
22	VDD3	—	Power supply 3.3V.
23-29	MD9-MD15	I/O	DRAM/ROM interface. (DATA)
30-36	NC	—	No connection.
37	$\overline{\text{MCE}}$	—	ROM chip enable.
38	$\overline{\text{MWE}}$	O	DRAM write enable.
39	VSS	—	Ground.
40	$\overline{\text{CAS}}$	O	DRAM/ROM interface.
41	VDD3	—	Power supply 3.3V.
42	$\overline{\text{RASO}}$	O	DRAM/ROM interface.
43	$\overline{\text{RASI}}$	O	
44-46	MA10-MA8	O	DRAM/ROM interface. (Address)
47	VSS	—	Ground.
48	MA7	O	DRAM/ROM interface. (Address)
49	VDD3	—	Power supply 3.3V.
50-52	MA6-MA4	O	DRAM/ROM interface. (Address)
53	VSS	—	Ground.
54	MA3	O	DRAM/ROM interface. (Address)
55	VDD3	—	Power supply 3.3V.
56-58	MA2-MA0	O	DRAM/ROM interface. (Address)
59	PGIO7	I/O	Programmable I/O.
60	$\overline{\text{RESET}}$	I	Reset input.
61	VDD MAX IN	—	Power supply - VDDMAX. (5.0V)
62-64	NC	—	No connection.
65	AGND DAC	—	Analog ground.
66	A DAC	—	Analog power supply (DAC) : 3.3V.
67	COMP OUT	O	Composite out.
68	AGND DAC	—	Analog ground.

Pin No.	Pin Name	I/O	Description
69	Y OUT	O	Video signal “Y” OUT.
70	AVDD DAC	—	Analog power supply (DAC) 3.3V.
71	AGND DAC	—	Analog ground.
72	R REF	I	Reference resistor input.
73	V REF	I	Voltage reference input.
74	AVDD DAC	—	Analog power supply (DAC) : 3.3V.
75	C OUT	O	Video signal “C” out.
76	AGND DAC	—	Analog ground.
77-79	CLK SEL0-2	I	Clock selection input.
80	VSS	—	Ground.
81	CLK SEL3	I	Clock selection input.
82	VDD3	—	Power supply 3.3V.
83, 84	CLK SEL4, 5	I	Clock selection input.
85	AGND PLL	—	Analog ground.
86	DA XCK	I	DA XCK (16.933MHz) input.
87	AVDD PLL	—	Analog power supply 3.3V.
88	DA EMP	O	DAC-emphasis output.
89, 90	PGIO5, O6	I/O	Programmable I/O.
91	PGIO0	I/O	
92	PGIO8	I/O	
93	$\overline{\text{VSYNC}}/\overline{\text{CSYNC}}$	O	$\overline{\text{VSYNC}}/\overline{\text{CSYNC}}$ output.
94	AVDD PLL	—	Analog power supply (PLL) 3.3V.
95	VID_DAC_CK	O	Video DAC clock.
96	PROC_CK	O	Processor clock.
97	AUD_XCK	O	Audio XCK.
98	AGND PLL	—	Analog ground.
99	VSS	—	Ground.
100	NC	—	No connection.
101	$\overline{\text{HSYNC}}$	O	$\overline{\text{HSYNC}}$ output.
102	VDD3	—	Power supply 3.3V.
103	VCK OUT	O	VCK out.
104	VSS	—	Ground.
105	GCK	I	Global clock signal input. (42.3MHz)
106	VCK	I	Video clock signal input. (27.0MHz)
107	GCK OUT	O	Global clock signal output. (27.0MHz)
108	DA LRCK	O	DAC-LRCK output.
109	VDD MAX OUT	—	Power supply (VDD MAX) : 5.0V.
110	DA DATA	O	DAC-PCM data output.
111	DA BCK	O	DAC-BIT clock output.
112	HD OUT	O	Micon interface. (Data out)
113	HRDY	O	Micon interface. (Host ready)

Pin No.	Pin Name	I/O	Description
114	$\overline{\text{HINT}}$	O	Micon interface. (Host interrupt)
115	CDG SCK	I	CD-G serial clock input.
116	VSS	—	Ground.
117	HCK	I	Micon interface. (Host clock)
118	VDD3	—	Power supply 3.3V.
119	HD IN	I	Micon interface. (Host data in)
120	VDD3	—	Power supply 3.3V.
121	HSEL	I	Micon interface. (Host select in)
122	CDG DATA	I	CD-G data input.
123	CDG VFSY	I	CD-G VFSY input.
124	CDG SOSI	I	CD-G SOSI input.
125	DSP-XCK	O	DSP-XCK output.
126-128	NC	—	No connection.

IC, LC74781M

Pin No.	Pin Name	I/O	Description
1	VSS1	—	GND connection terminal. (Digital ground terminal).
2	Xtal IN	I	External X'tal and capacitor for internal sync generator, or the external clock are connected to this terminal. (2fsc or 4fsc).
3	Xtal OUT	O	
4	CTRL1	I	Either the external clock input mode or the X'tal generator mode is selected by this selector terminal. L: X'tal generator mode, H: External clock input.
5	BLANK	O	Blank signal (character and the green ORed signal) is output from this terminal. (MODE 0: composite sync signal is output at H.) When reset ($\overline{RST}$ terminal = L), the X'tal clock signal is output. (It is not output when reset by the reset command).
6	OSC IN	I	External coil and capacitor for the character output dot clock generator are connected to this terminal.
7	OSC OUT	O	
8	CHARA	O	The character signal is output from this terminal. (MOD 0: when H, the external sync signal identification signal is output from this terminal. This output signal tells whether the external sync signal is present or not. When external sync signal is present, H is output.) When reset ($\overline{RST}$ terminal = L), the dot clock signal (LC oscillator) is output. (It is not output when reset by the reset command).
9	$\overline{CS}$	I	Enable signal for the serial data input is input to this terminal. The serial data input is enabled at L. Pull-up resistor is built-in. (Hysteresis input).
10	SCLK	I	Clock of the serial data input is input to this terminal. Pull-up resistor is built-in. (Hysteresis input).
11	SIN	I	Serial data input terminal. Pull-up resistor is built-in. (Hysteresis input).
12	VDD2	—	Power supply for the composite video signal level adjustment. (Analog power supply).
13	CV OUT	O	Composite video signal output terminal.
14	NC	—	Connected to GND or not connected.
15	CV IN	I	Composite video signal input terminal.
16	VDD1	—	Power supply (+5V digital power supply).
17	SYN IN	I	Video signal for the internal sync separator circuit is input to this terminal. (When the internal sync separator circuit is not used, the horizontal sync signal or composite sync signal is input to this terminal).
18	SEP C	—	Internal sync separator circuit bias voltage monitoring terminal.
19	SEP OUT	O	The composite sync output signal of the internal sync separator circuit is output from this terminal. (H: MOD 1. H: during internal sync mode. L: during external sync mode.) (When internal sync separator circuit is not used, the SYN IN input signal is output from this terminal).
20	SEP IN	I	The output signal of the SEP OUT terminal is integrated so that the vertical sync signal is input to this terminal. An integrator circuit must be connected between the SEP OUT terminal and this terminal. When this terminal is not used, it must be connected to VDD1.
21	CTRL2	I	When selecting any of the NTSC or PAL or PAL-M or PAL-N system, the pin setting has priority. When L, the NTSC system is selected after resetting. Selection of either NTSC or PAL or PAL-M or PAL-N system by the command becomes effective. H: PAL-M system.

Pin No.	Pin Name	I/O	Description
22	CTRL3	I	Controls whether or not to input the $\overline{\text{VSYNC}}$ signal to the SEPIN input. L: to input the $\overline{\text{VSYNC}}$ signal. H: not to input the $\overline{\text{VSYNC}}$ signal.
23	$\overline{\text{RST}}$	I	System reset input terminal. Pull-up resistor is built-in. (Hysteresis input).
24	VDD1	—	Power supply. (+5V digital power supply).

IC, µPD78016FGC

Pin No.	Pin Name	I/O	Description
1	RBPLS	O	RADIAL BALANCE PLUS.
2	AMUTE	O	AUDIO ANALOG MUTE (H=MUTE ON).
3	GFS	I	GFS.
4	XVCDMD	I	AUDIO/VIDEO CD MODE (L=VCD=SPINDLE GAIN UP).
5	MD2	O	DOUT MUTE CONT.
6	EMPH	I	EMPHASIS.
7	SQSO	I	SQDATA FROM CD.
8	SQCK	O	SQCLK TO CD.
9	VSS	—	GND.
10	SWNT	I	SW TV OUT MODE (L=NTSC).
11	SWAUTO	I	SW TV OUT MODE (L=NTSC/PAL AUTO).
12	SWPAL	I	SW TV OUT MODE (L=PAL).
13	EMERG	I	POWER EMERGENCY STOP (L*3sec=STOP).
14	NC	—	Nou used.
15	LPCSEL	I	“LPC ON/OFF (H=ON, NORMAL)”.
16	NC	—	Nou used.
17	LOCK	O	GFS (FRAME SYNC) LOCK (NO USE=H).
18	DMUTE	O	DIGITAL DATA OUT MUTE.
19	SENS	I	DSP SENS1 FROM CD.
20	XCDRST	O	CD RESET.
21	DATA	O	DATA TO CD.
22	XLAT	O	XLT TO CD.
23	CLOK	O	CLK TO CD.
24	VSS	—	GND.
25	FOK	I	FOCUS OK.
26	SENS2	I	SSP SENS2 FROM CD.
27	XBUSY	I/O	READY/BUSY I/O TO HOST OD.
28	NC	—	Nou used.
29	NC	—	
30	NC	—	
31	TST0	I/O	CHECK LAND.
32	TST1	I/O	
33	TST2	I/O	
34	TST3	I/O	
35	RESET	I	RESET.
36	HRDY	I	HRDY FROM CL680.
37	XHINT	I	HINT FROM CL680.
38	NC	—	Nou used.
39	SCOR	I	SCOR FROM CD.
40	VDD	—	5.0VDD.
41	XO	O	8.0MHz CERALOCK.

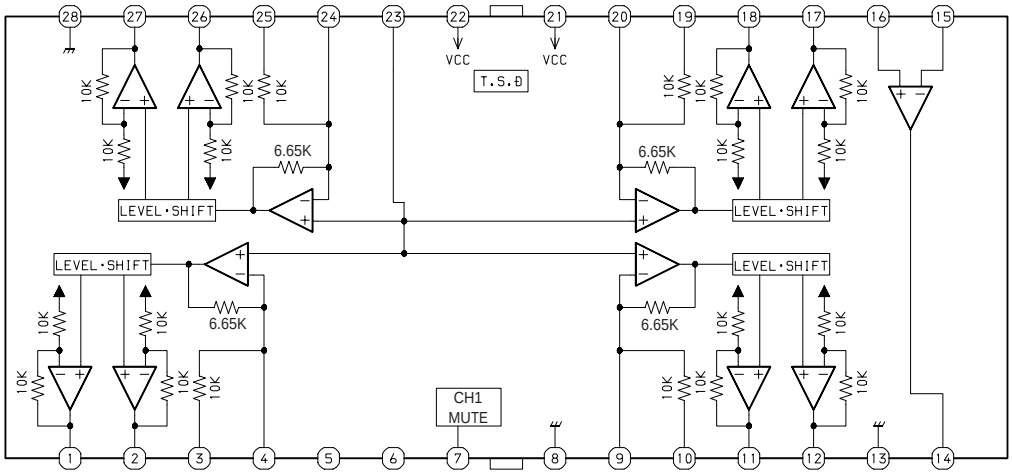
Pin No.	Pin Name	I/O	Description
42	XI	I	8.0MHz CERALOCK.
43	VSS	—	GND.
44	XT2	—	Nou used.
45	XT1	I	5.0VDD.
46	AVSS	—	GND.
47	XMPGRST	O	MPEG BLOCK IC RESET.
48	HSEL	O	ADDRESS/DATA SEL TO CL680.
49	INLSW	I	INSIDE LIMIT SW.
50	NC	—	Nou used.
51	OSDXCS	O	OSD CHIP SELECT.
52	ABSEL	I	CXA1992A/B SELECT (L=CXA1992A).
53	CLVSEL	I	CLV MODE SELECT (H=CLV-N).
54	AADSEL	I	AUTO ADJUST SELECT (H=AUTO ON).
55	AVDD	—	5.0VDD.
56	AVREF	—	
57	HDOUT	I	HD-OUT FROM CL680.
58	HDIN	O	HD-IN TO CL680.
59	HCK	O	HCK TO CL680.
60	OSDDATA	O	OSD DATA.
61	OSDCLK	O	OSD CLOCK.
62	COMMAND	I	COMMAND FROM HOST.
63	STATUS	O	STATUS TO HOST.
64	SCK	I	SCK FROM HOST.

IC, SM5878M

Pin No.	Pin Name	I/O	Description
1	MUTE	I	MODE = H: Soft mute ON/OFF terminal. (Mute at H). MODE = L: Attenuator level DOWN/UP terminal. (DOWN at H).
2	DEEM	I	De-emphasis ON/OFF terminal. (De-emphasis ON at H).
3	CKO	O	Oscillator clock output. (16.9344 MHz).
4	DVSS	—	Digital VSS terminal.
5	BCKI	I	Bit clock input terminal.
6	DI	I	Serial data input terminal.
7	DVDD	—	Digital VDD terminal.
8	LRCI	I	Sample rate clock (fs) input terminal. (H = L ch/L = R ch).
9	TSTN	I	Test input. (“H” or open during normal operation)
10	TO1	O	Test output 1. (Normally low level output).
11	AVDDL	—	Analog VDD terminal. (For L ch).
12	LO	O	Left channel analog output terminal.
13	AVSS	—	Analog VSS terminal.
14	RO	O	Right channel analog output terminal.
15	AVDDR	—	Analog VDD terminal. (For R ch).
16	MUTEO	O	Infinity zero detection output.
17	XVDD	—	X’tal system VDD terminal.
18	XTI	I	X’tal oscillator terminal. (Or external clock input terminal of 16.9344 MHz).
19	XTO	O	X’tal oscillator terminal.
20	XVSS	—	X’tal system VSS terminal.
21	DS	I	Double-speed/normal playback selection. (Double-speed at H).
22	RSTN	I	Reset terminal. (Reset at L).
23	MODE	I	Soft mute/Attenuator mode selection. (Soft mute at H).
24	ATCK	I	Attenuator level setup clock (Ignored when MODE = H).

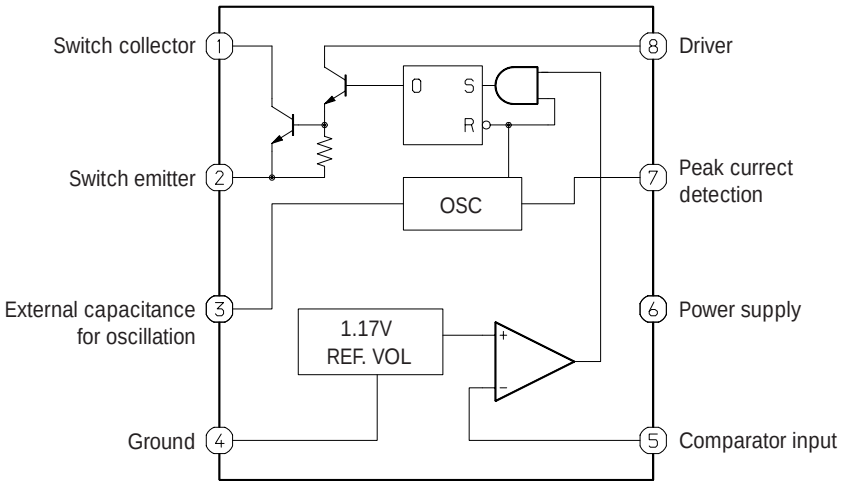
IC BLOCK DIAGRAM

IC, BA5915FP

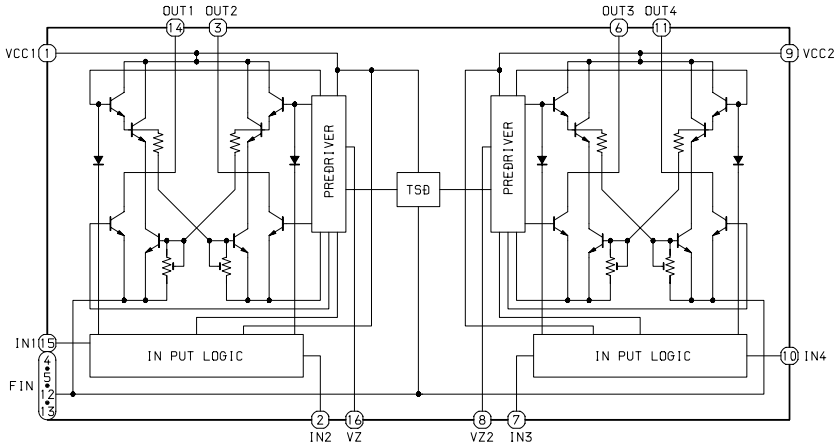


T.S.D: Thermal shut-down
Resistors are in units of Ω.

IC, M5291FP



IC, LB1644



TRUH TABLE

IN1	IN2	OUT1	OUT2	IN3	IN4	OUT3	OUT4
0	0	L	L	0	0	L	L
1	0	H	L	1	0	H	L
0	1	L	H	0	1	L	H
1	1	L	L	1	1	L	L

INPUT			OUTPUT				MODE	
IN1	IN2.3	IN4	OUT1	OUT2	OUT3	OUT4	M1	M2
0	0	0	L	L	L	L	BRAKE	BRAKE
1	0	0	H	L	L	L	FF/REW	BRAKE
0	1	1	L	H	L	L	REW/FF	BRAKE
1	1	0	L	L	H	L	BRAKE	FF/REW
0	0	1	L	L	L	H	BRAKE	REW/FF
1	1	1	L	L	L	L	BRAKE	BRAKE

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

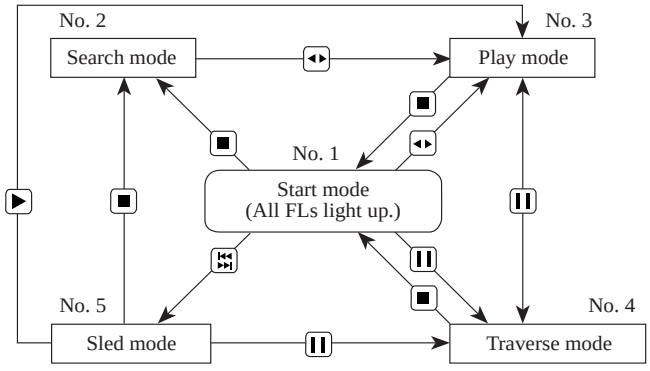
2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	TEST□□ □□ □□ Flashes repeatdly	• Test mode is activated. • CD block power is ON.	• Test mode
Search mode No.2	■ key		• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	⏸ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

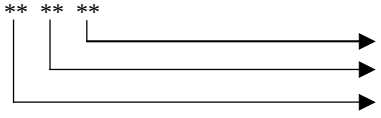
* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ⏸ status is active. If they are pressed, playback will not be possible after the ⏸ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ⏸ status, press the ■ key and return to the start mode (No.1).
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



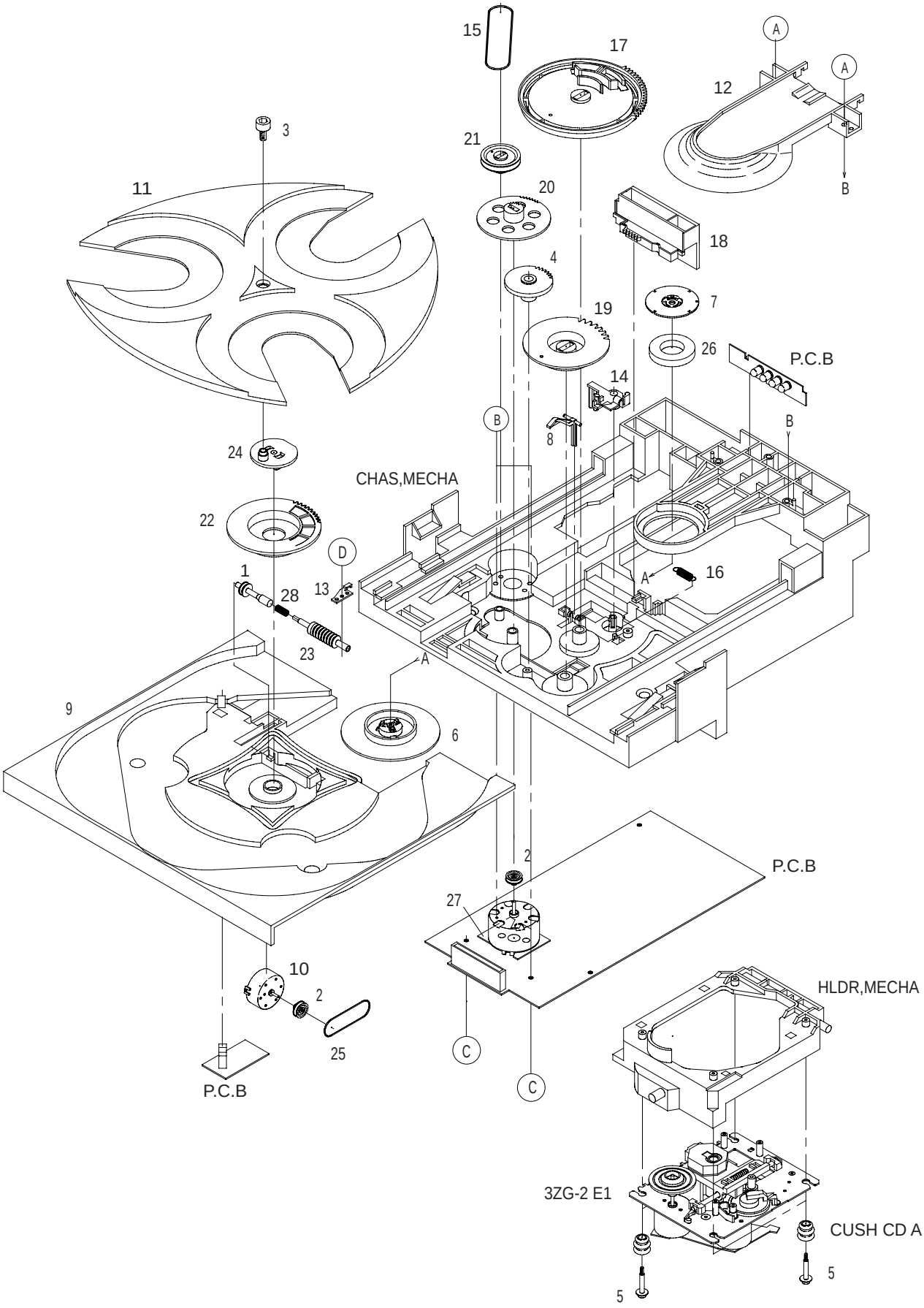
   If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

5. How to check the Automatic Adjustment Values
   The automatic adjustment values can be checked by pressing the square (■) button.
   FL display (displayed in hexadecimal values)



Note) The reference value is “20 08 08”.

MECHANICAL EXPLODED VIEW 1/1

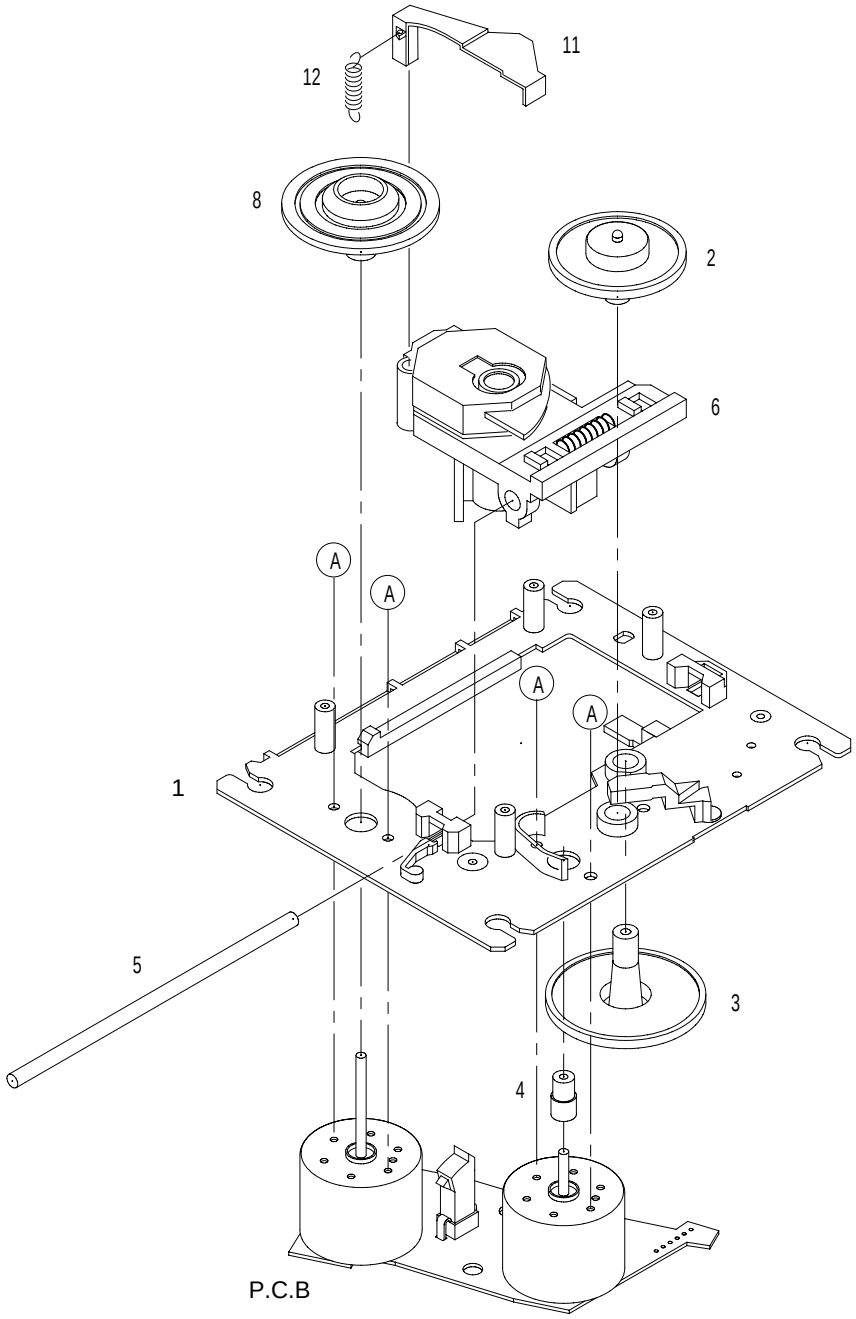


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210		PULLY,WORM N
2	84-ZG1-267-010		PULLEY,LOAD MO 8
3	81-ZG1-239-010		S-SCREW,TT
4	81-ZG1-291-110		GEAR,TRAY RELAY NO3
5	81-ZG1-271-010		S-SCREW MECH REAR
6	81-ZG1-277-310		HLDR,MAGNET N
7	81-ZG1-255-110		PLATE,MAGNET MK2
8	83-ZG3-213-010		LVR,SW
9	84-ZG1-003-310		TRAY,NO2-B
10	87-045-364-010		MOTOR(BCH3B14)
11	84-ZG1-005-210		TURNTABLE,NO1(*)
12	84-ZG1-011-010		REFLECTOR,CD
13	84-ZG1-259-010		SPR-P,WORM
14	84-ZG1-208-210		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-010		SPR-E CAM S
17	84-ZG1-215-410		GEAR,MAIN CAM BLU
18	84-ZG1-216-310		SLIDE,MECHA CAM YEL
19	84-ZG1-205-110		GEAR,TRAY
20	84-ZG1-206-110		GEAR,RELAY
21	84-ZG1-207-010		PULLEY,RELAY
22	84-ZG1-221-010		GEAR,MAIN TT
23	84-ZG1-238-010		GEAR,WORM N
24	84-ZG1-224-010		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	83-ZG3-602-010		RING,MAG
27	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-248-010		SPR-C,WORM
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-251-070-410		U+2.6-3
C	87-342-036-210		UT2+2-8
D	87-067-981-010		BVT2+3-6 BLK

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E1)



CD MECHANISM PARTS LIST 1/1 (3ZG-2 E1)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-110		CHAS ASSY,SHT
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT,SLIDE 3
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-233-010		TURN TABLE,A5
11	83-ZG2-245-110		LEVER,SHUTTER
12	83-ZG2-250-010		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

CX-NAK572
CX-NK270
CX-NK290
CX-NK370
CX-NK570
CX-NK765
CX-NK770
CX-NK970
DX-SNKH100

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
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G一　一	
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